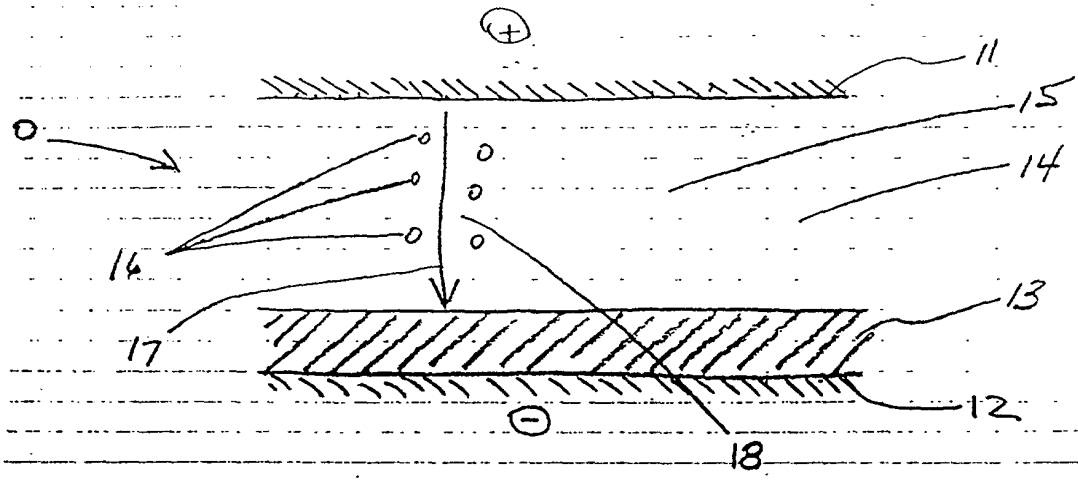

FIG. 1

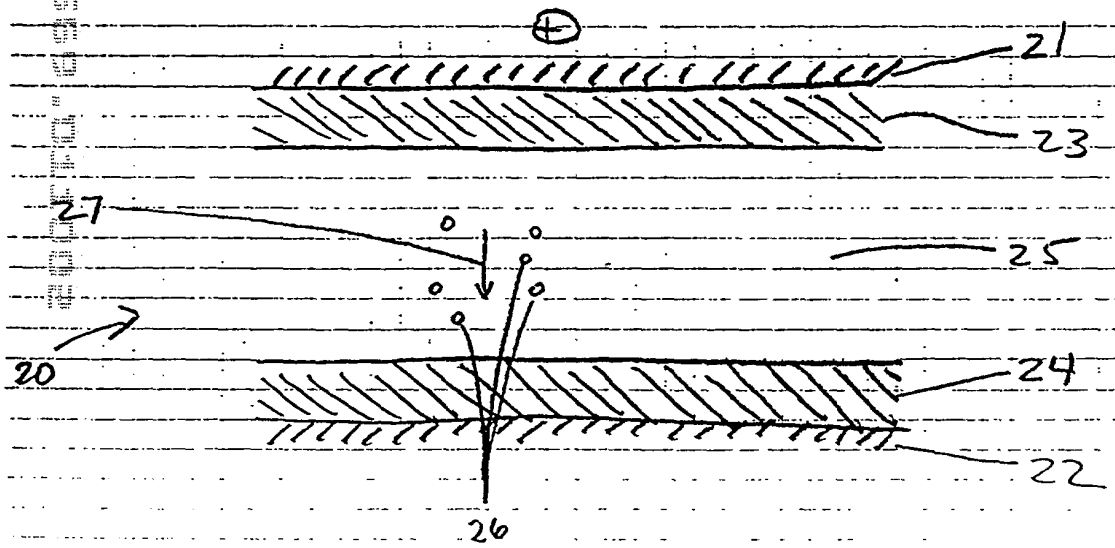

FIG. 2

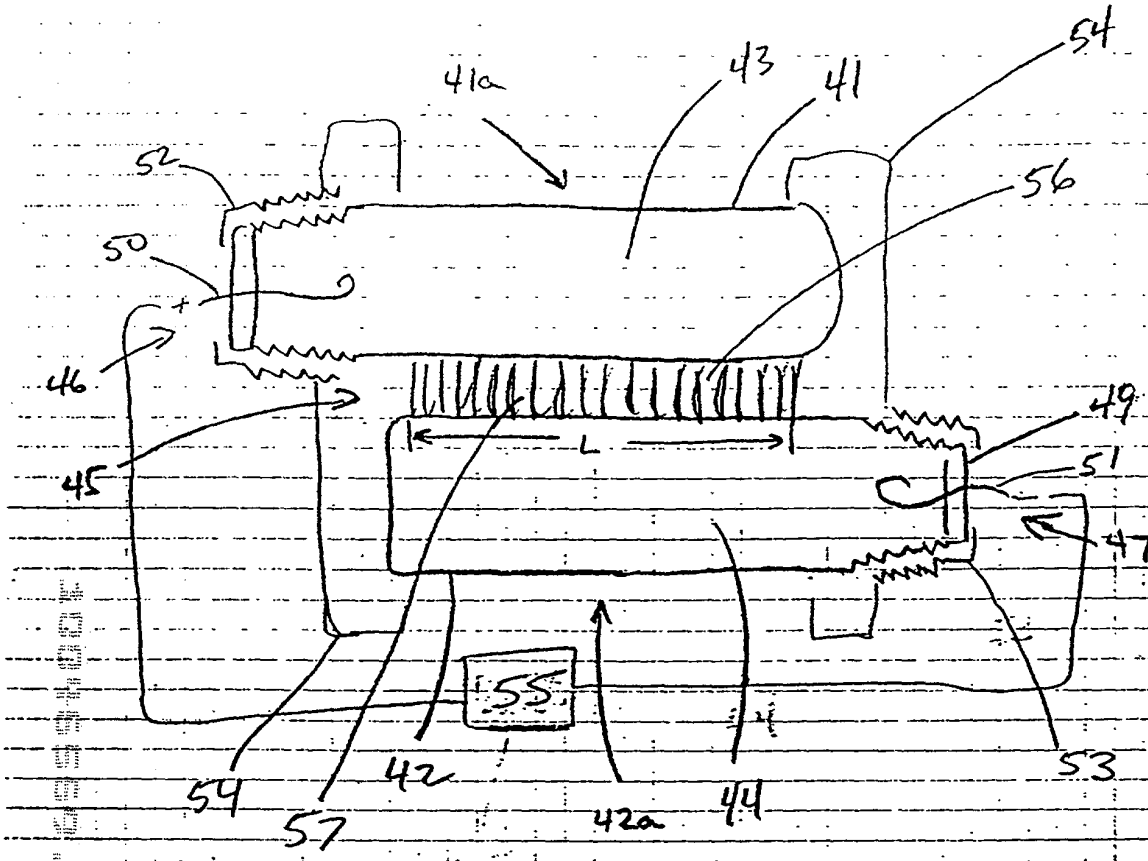

FIG. 3

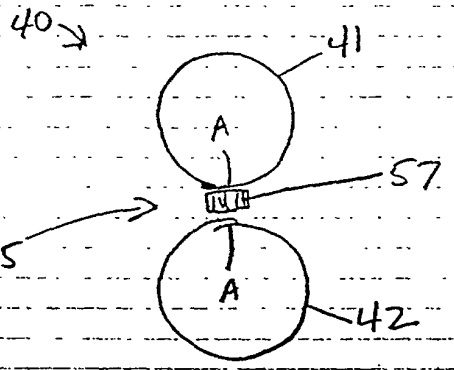

FIG. 4

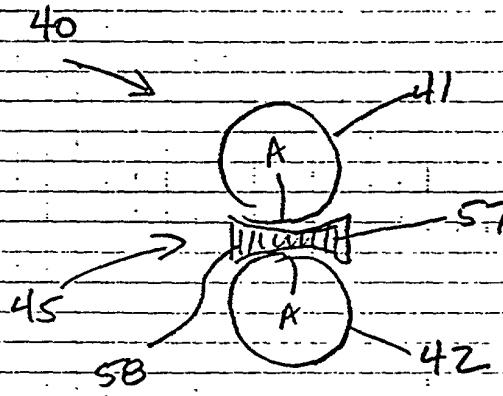

FIG. 5

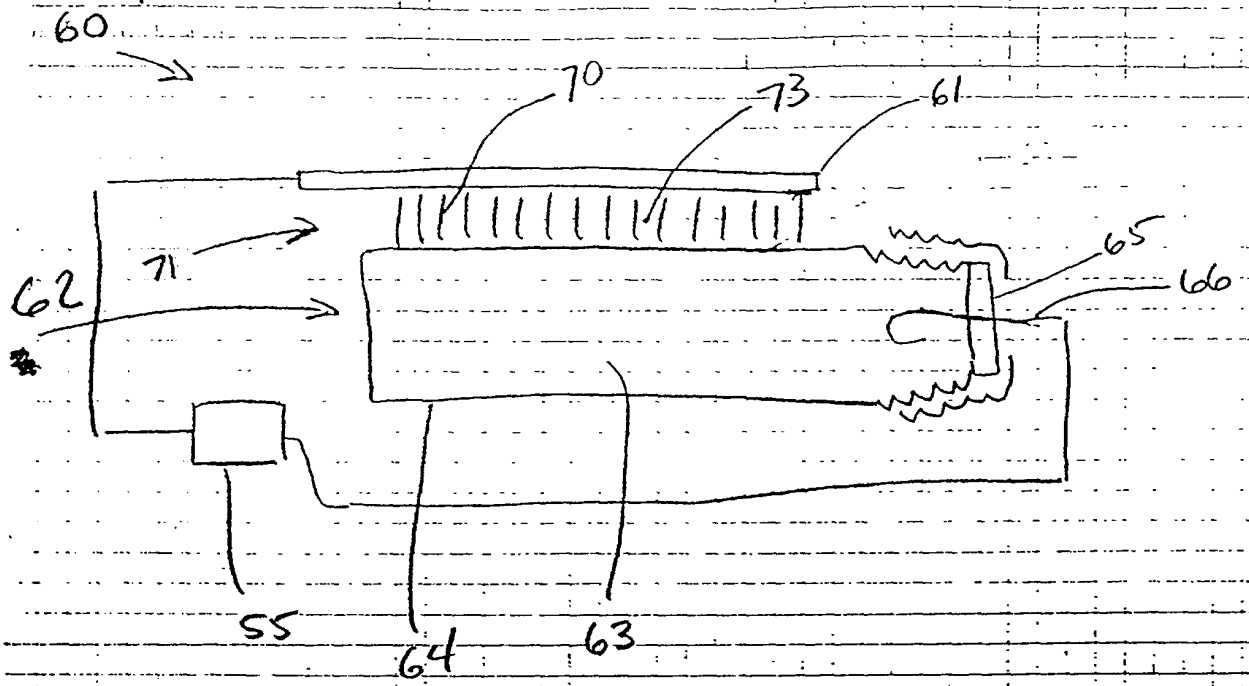

FIG. 6

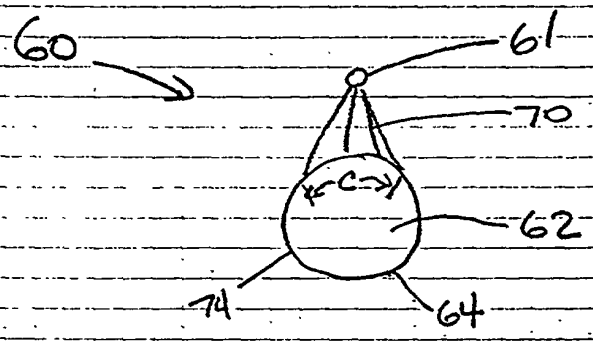

FIG. 7

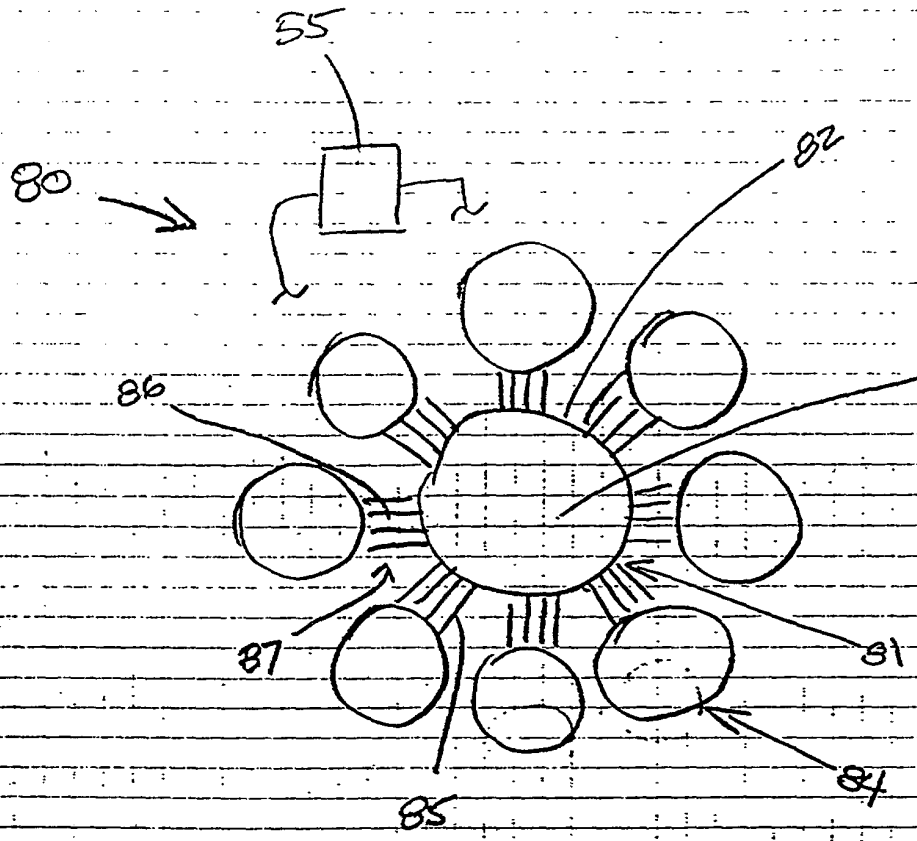

FIG. 8

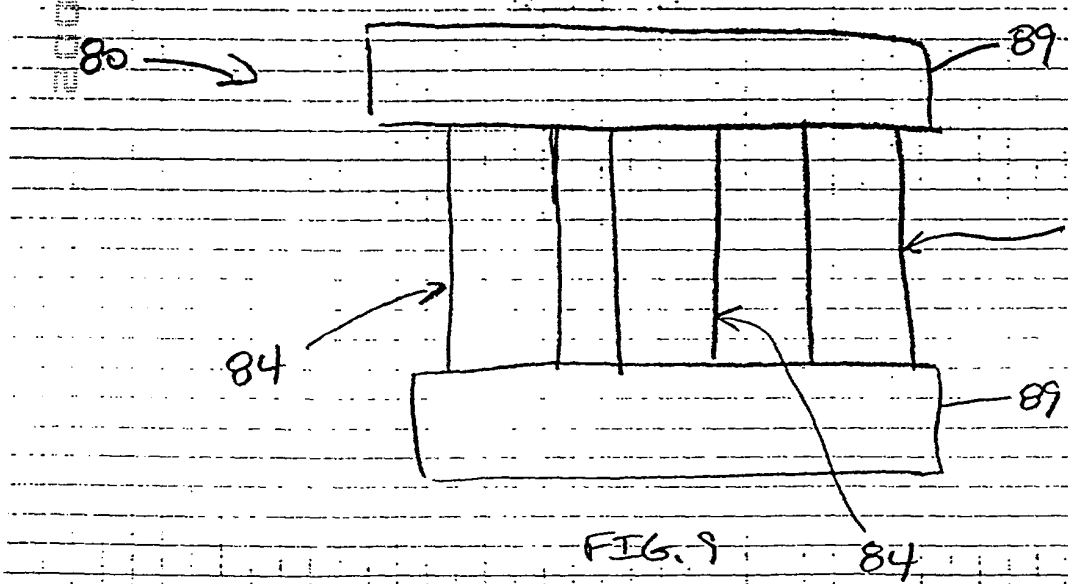

FIG. 9

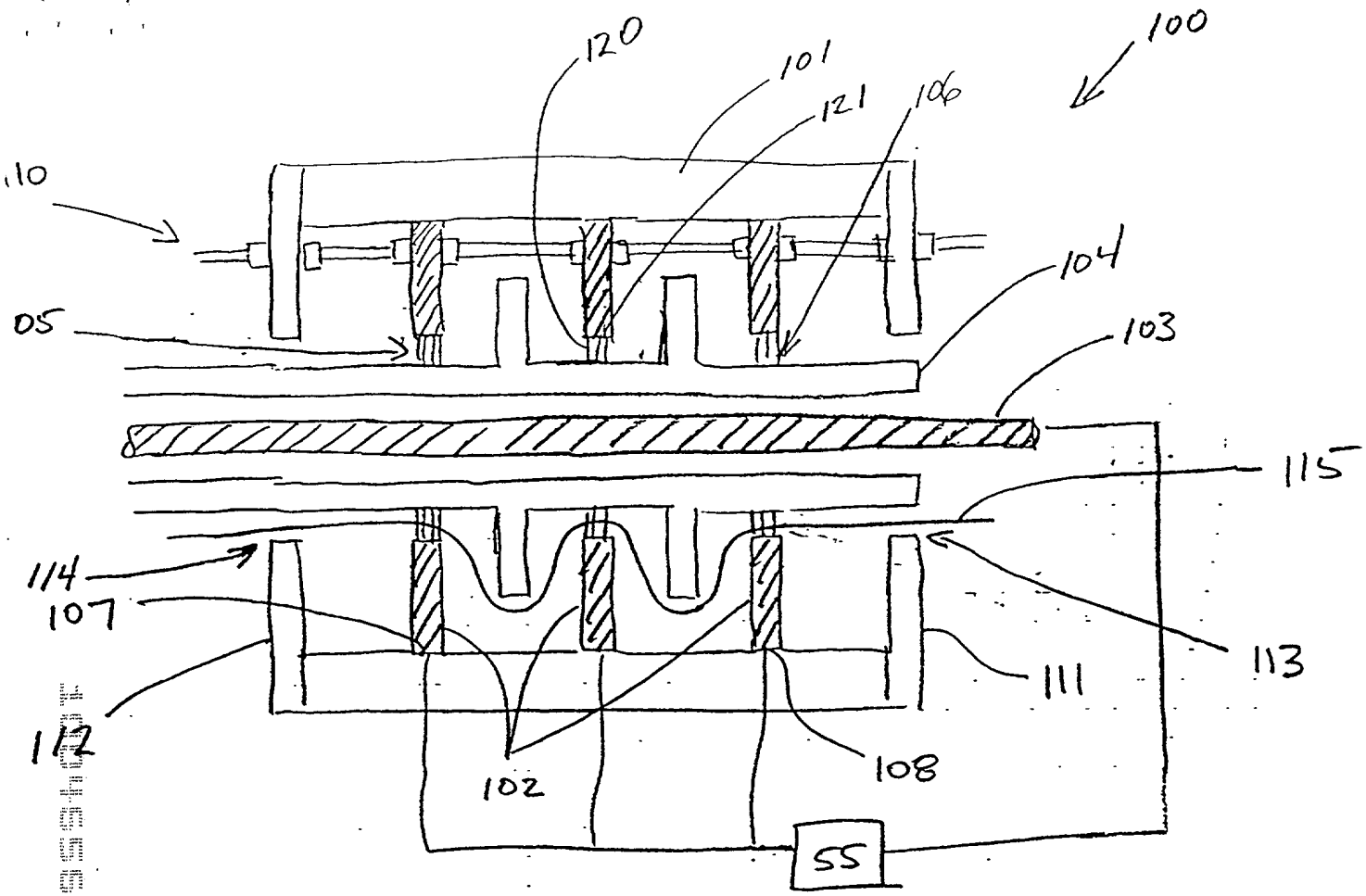
100
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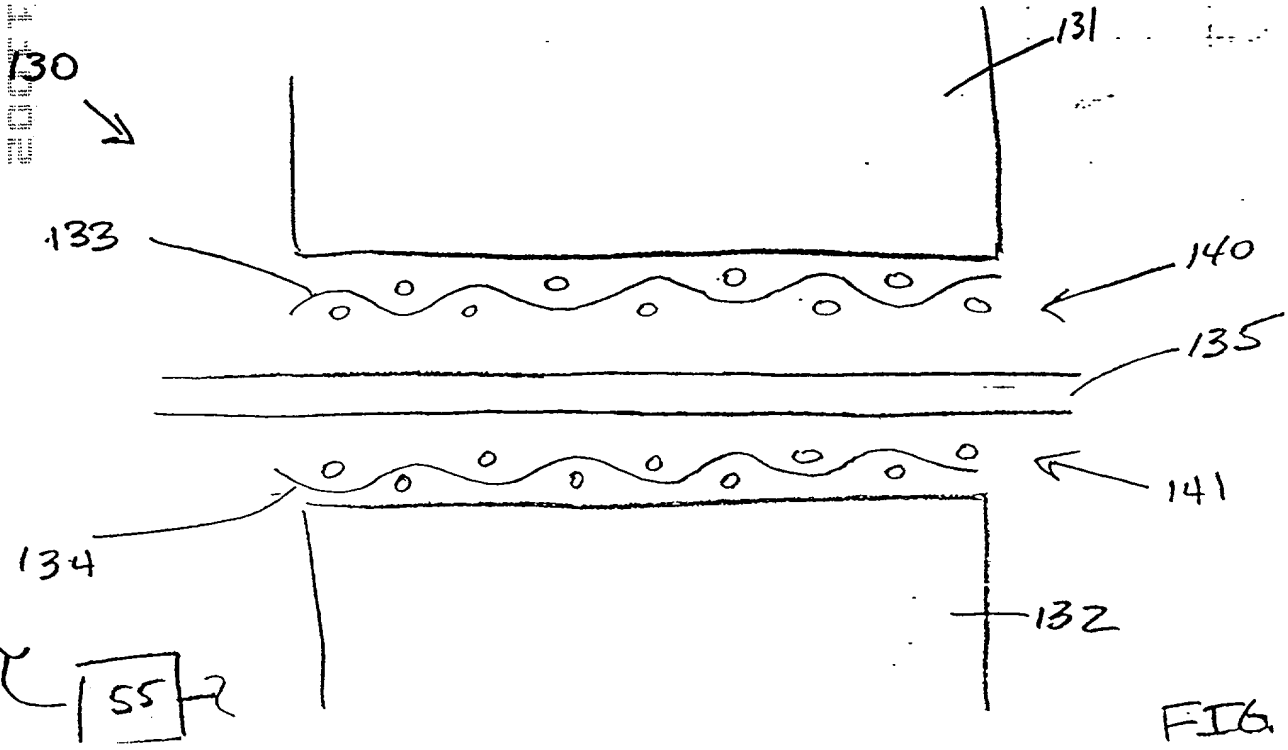
FIG. 10


130
131
133
140
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141
134
132
55

FIG. 11

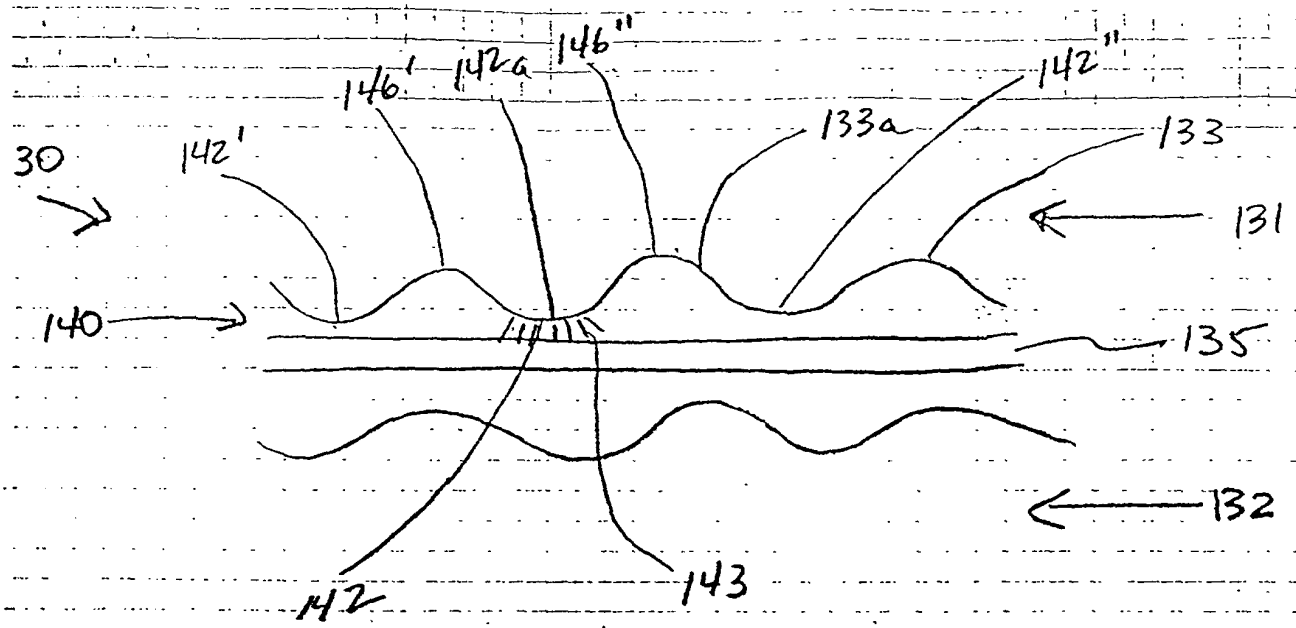
30
142'
146'
142a
146"
142"
133a
133
131
140
135
132
142
143

FIG. 12

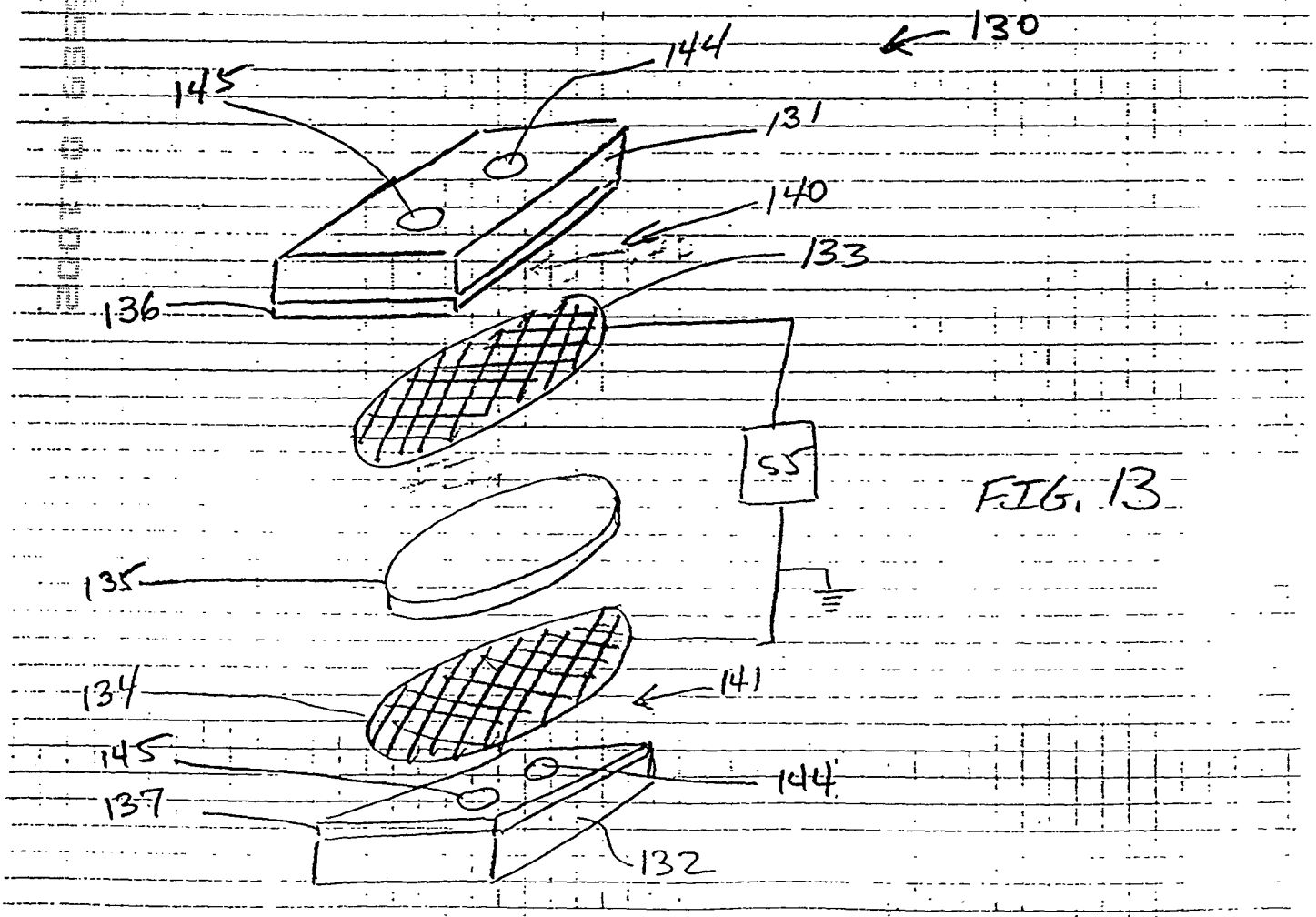
130
144
145
131
140
133
136
55
135
134
141
145
144'
137
132

FIG. 13

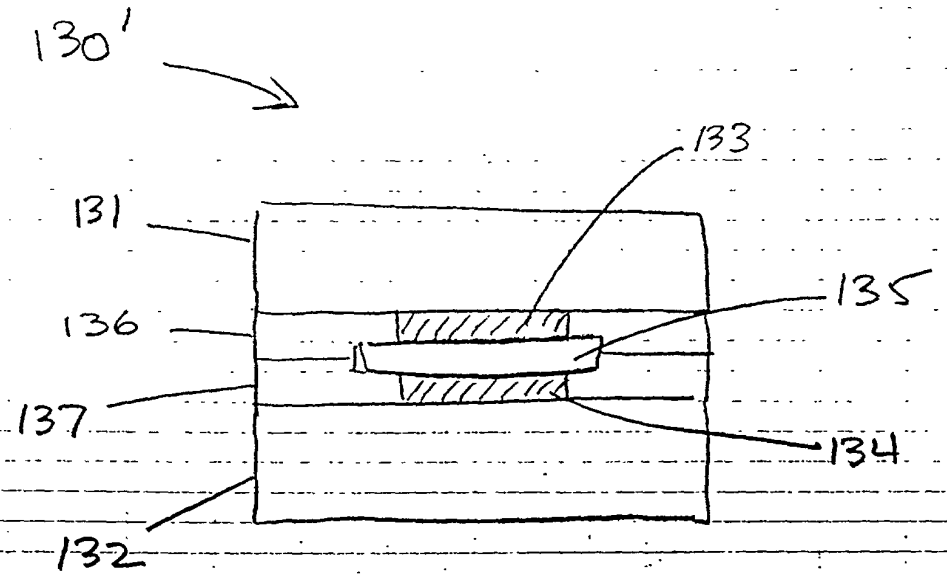

FIG. 14

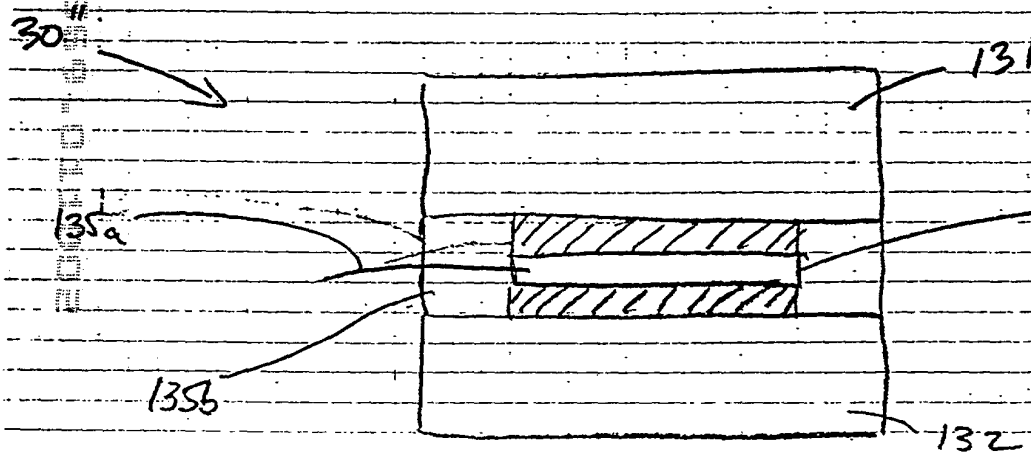

FIG. 15

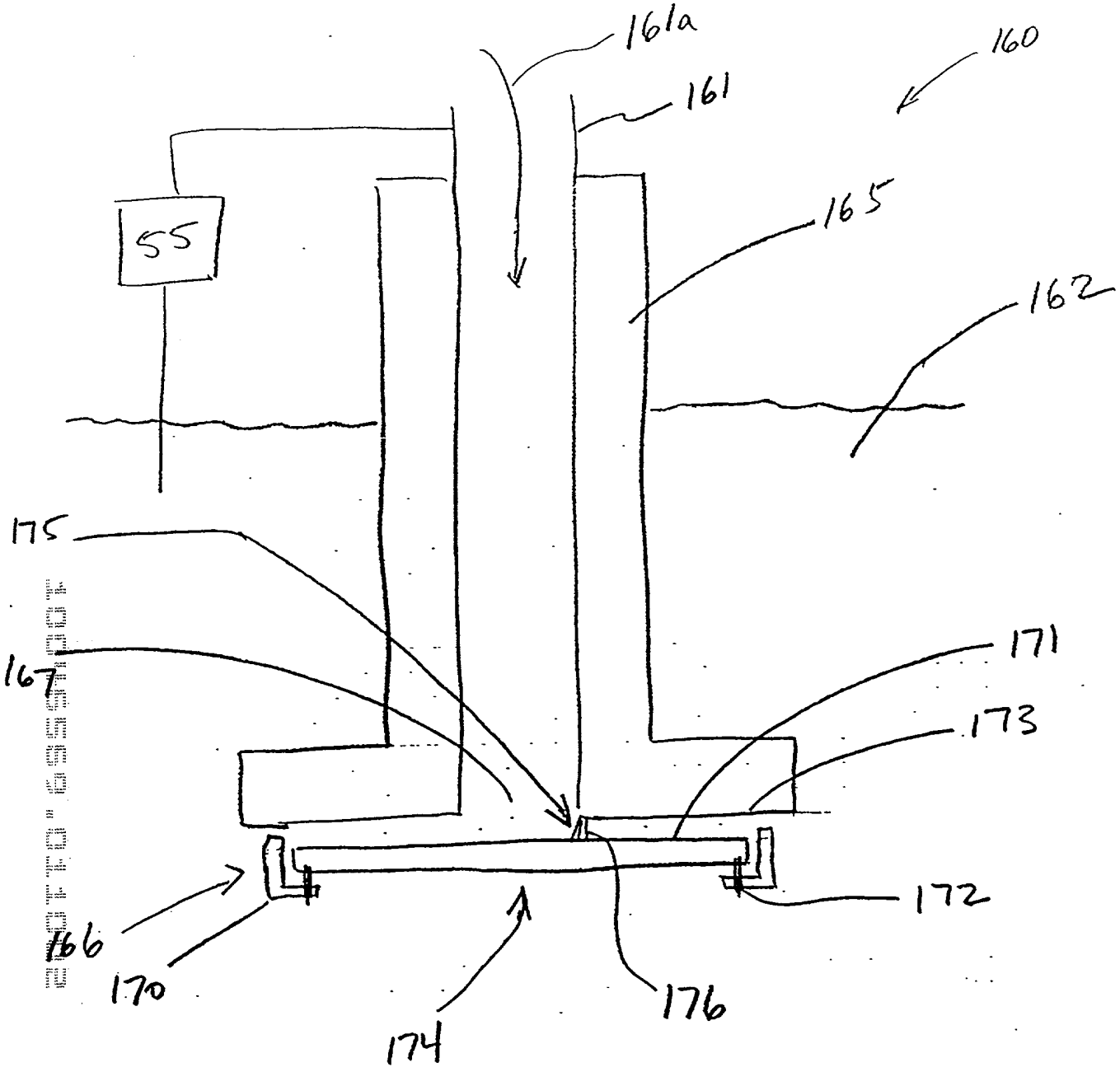

FIG. 16

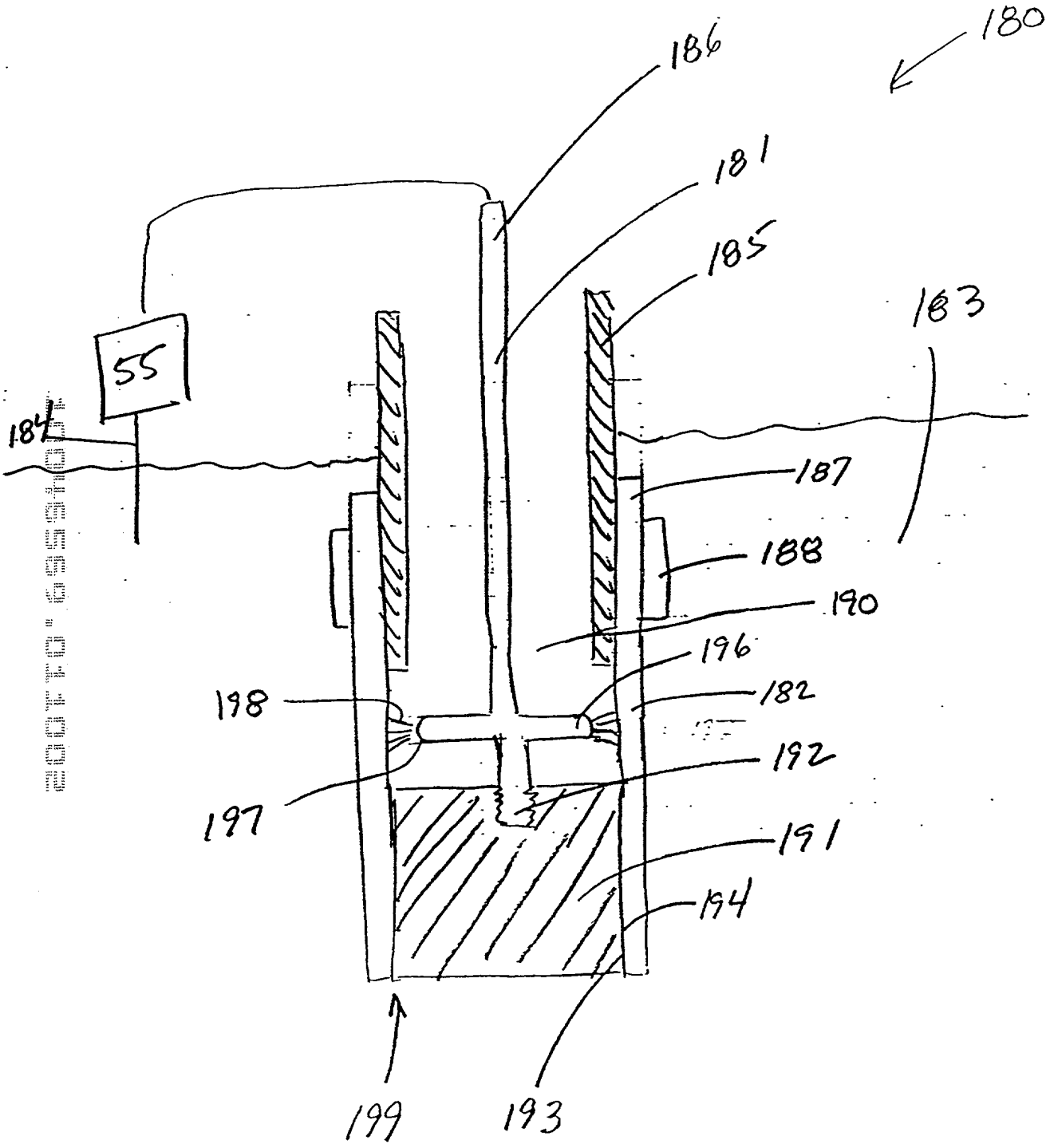
180
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FIG. 17

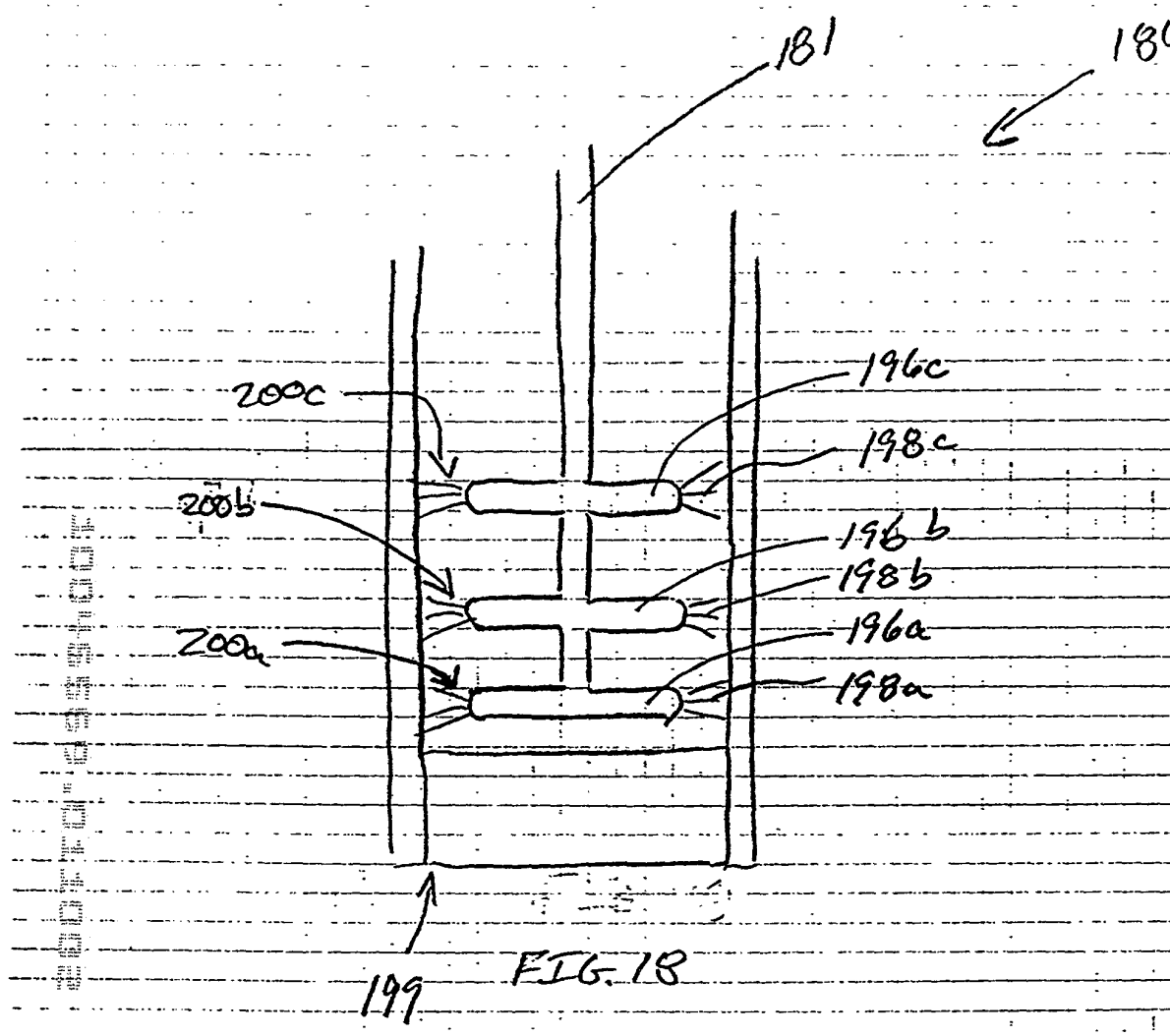


FIG. 18

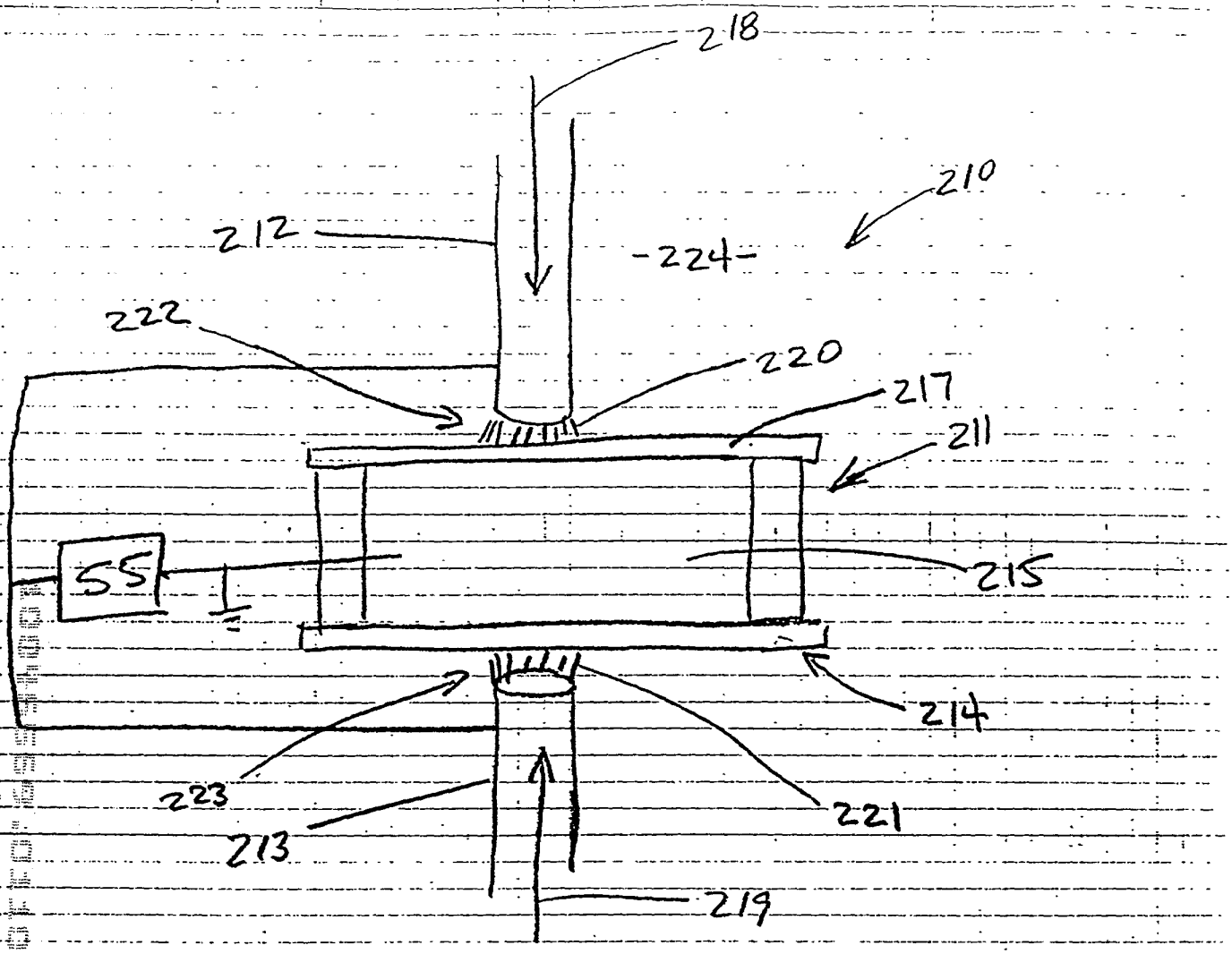


FIG. 19

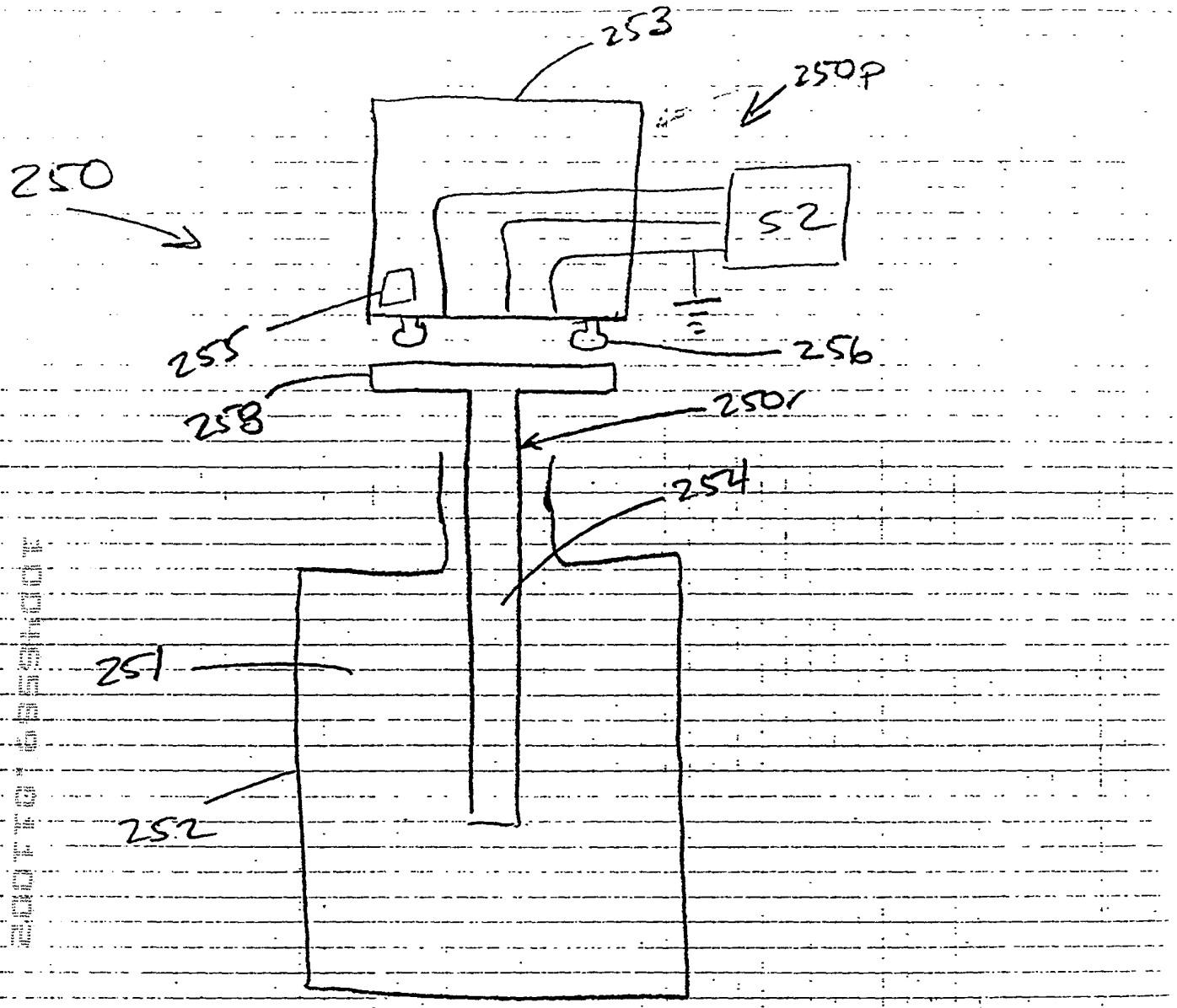
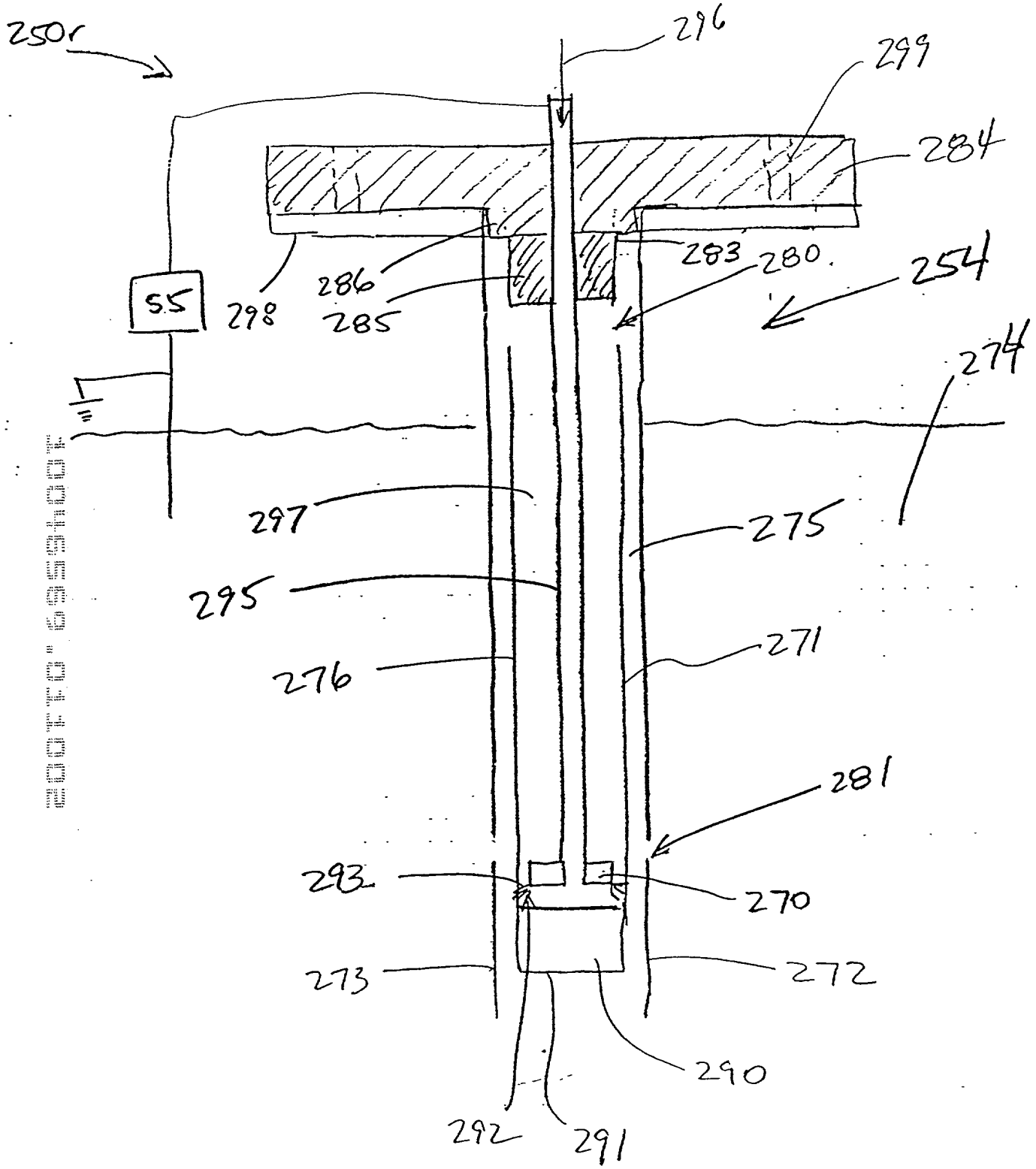


FIG. 20


250r
296
299
284
286
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280
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FIG. 21

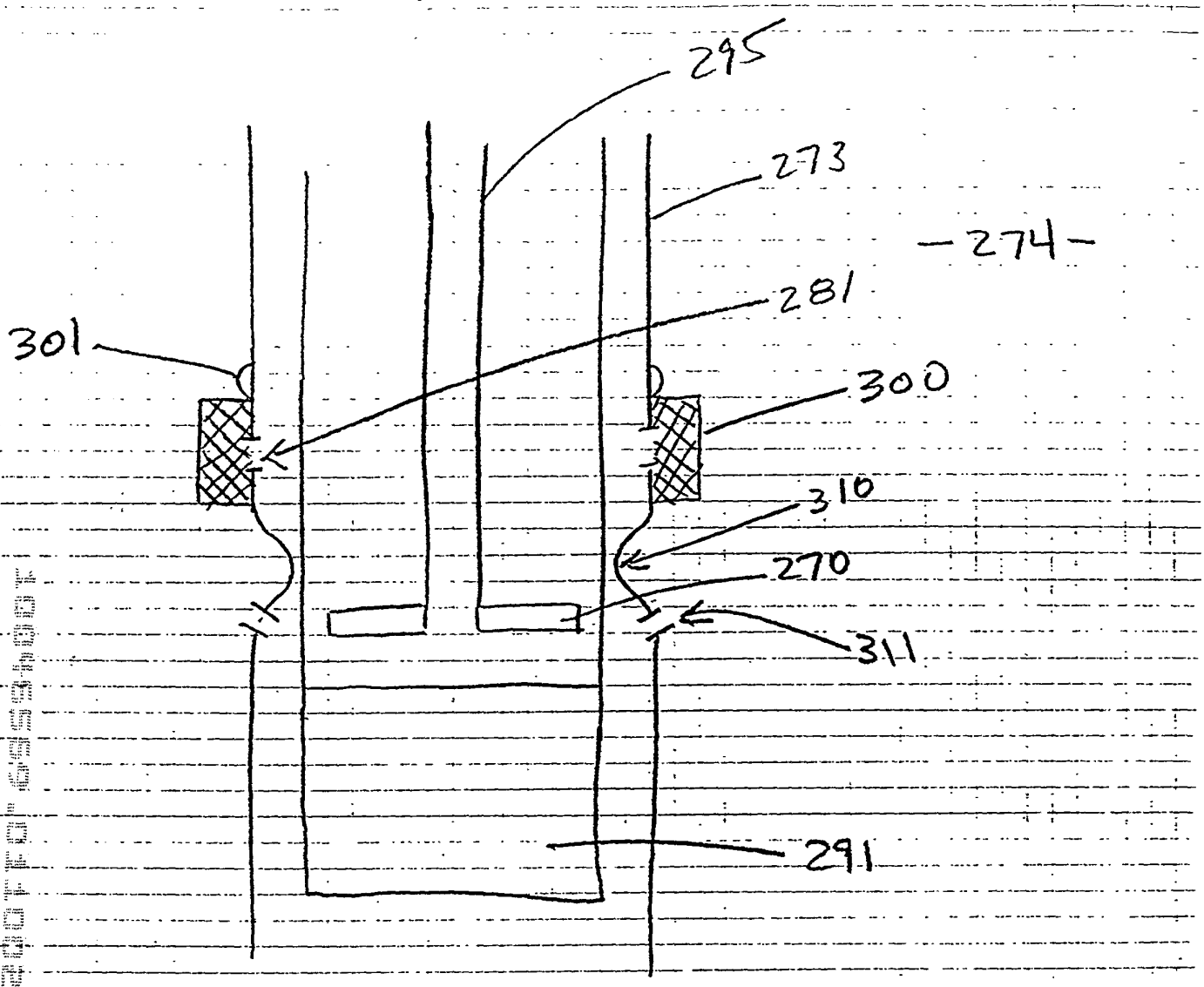
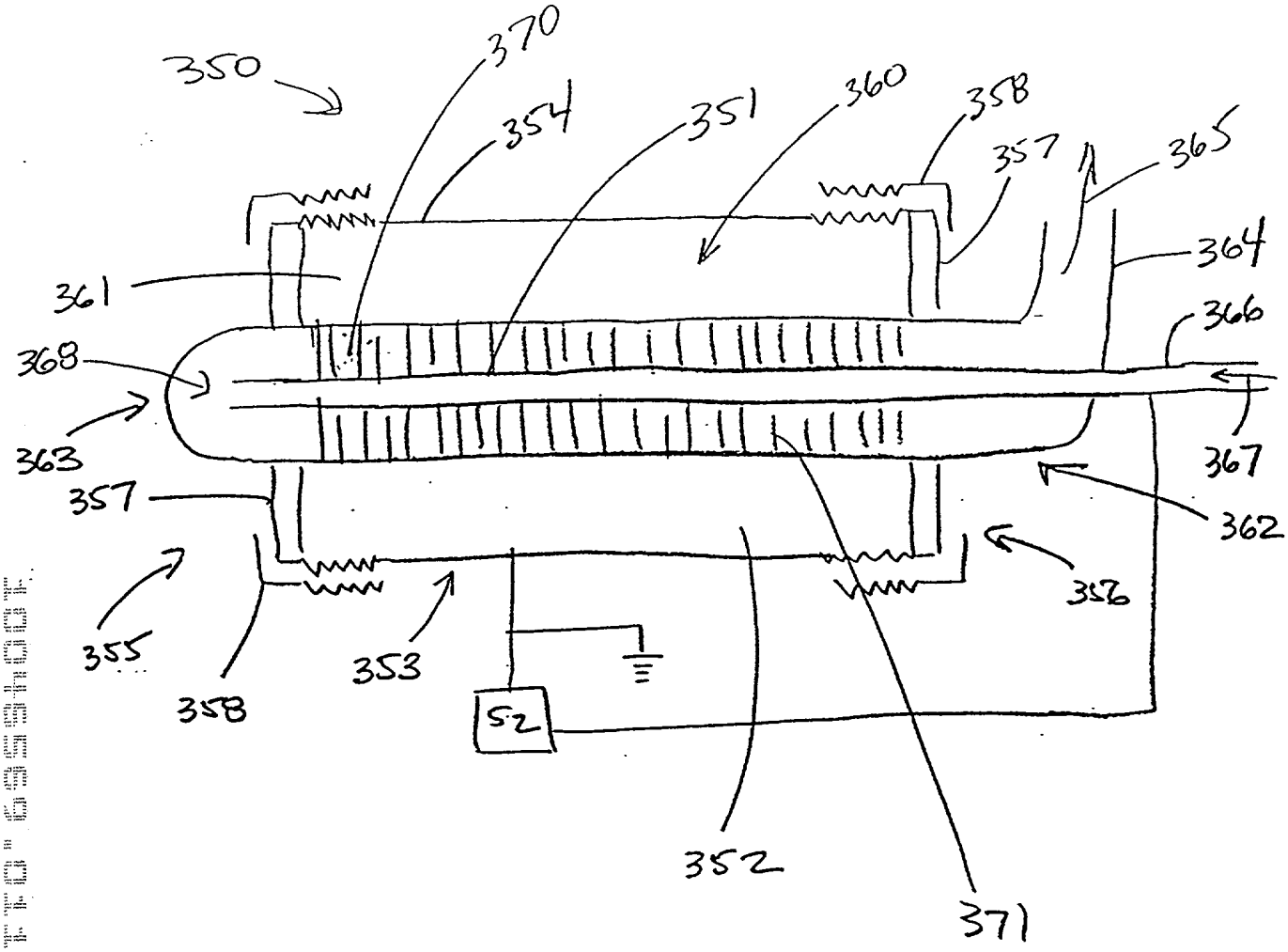


FIG. 22


350
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358
353
S2
352
371

FIG. 23

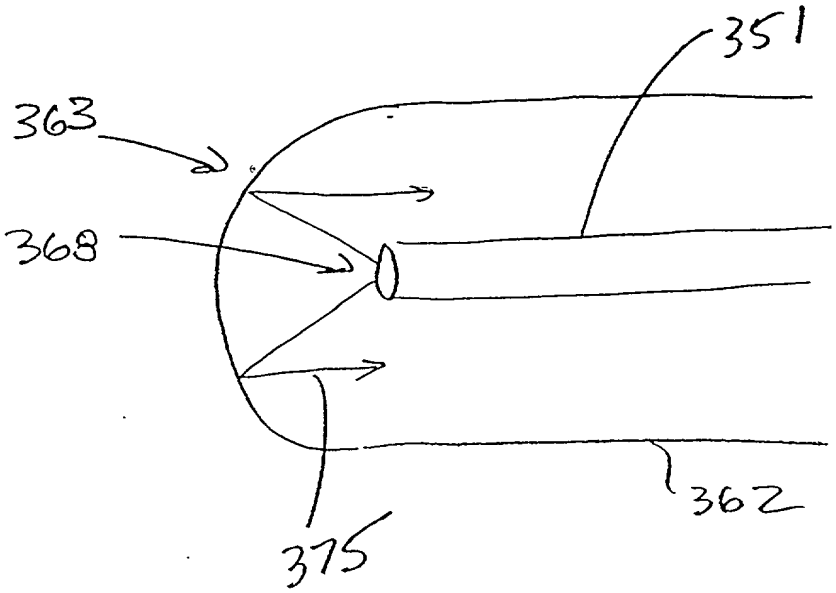

351
363
368
362
375

FIG. 24

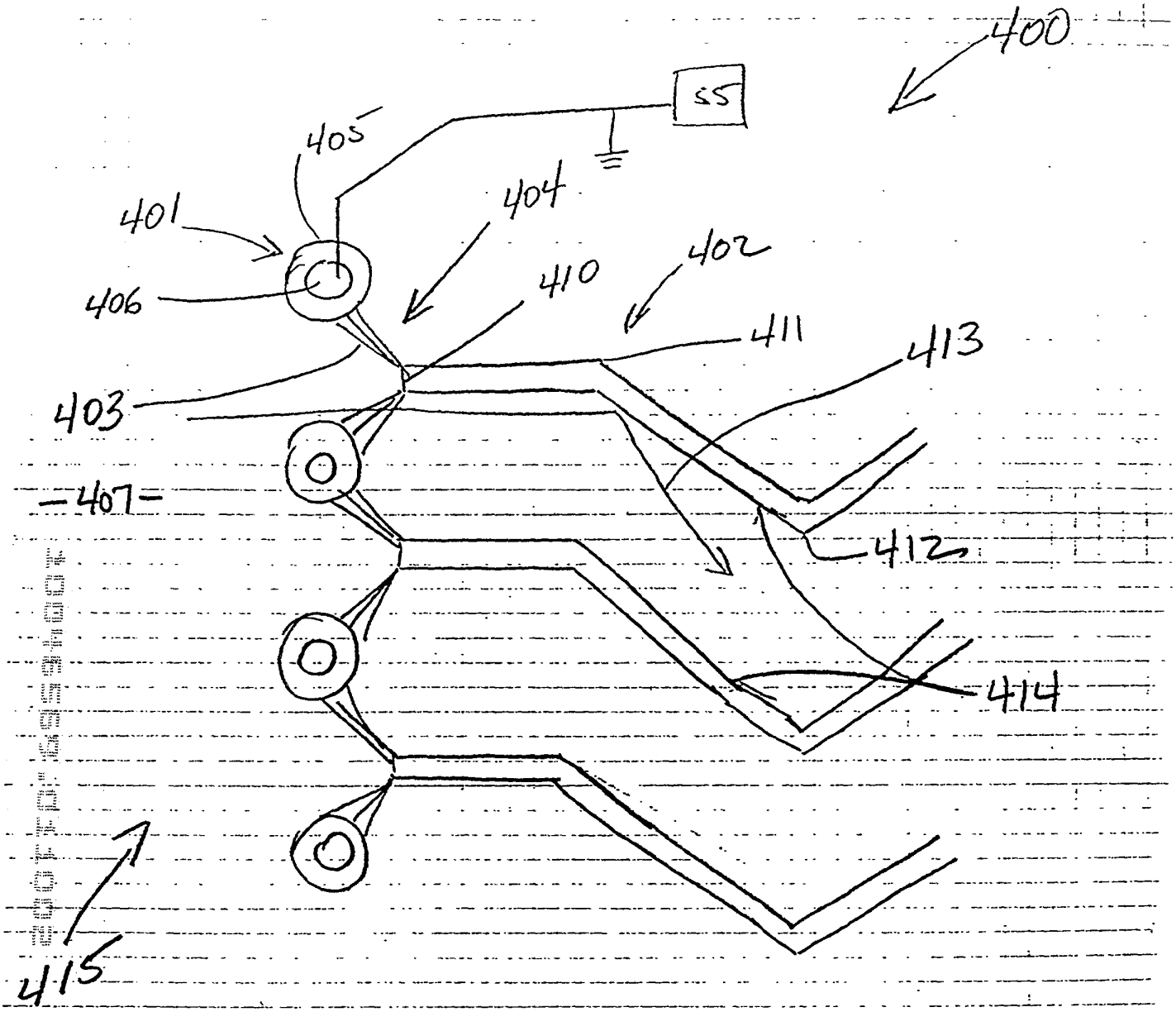


FIG. 25

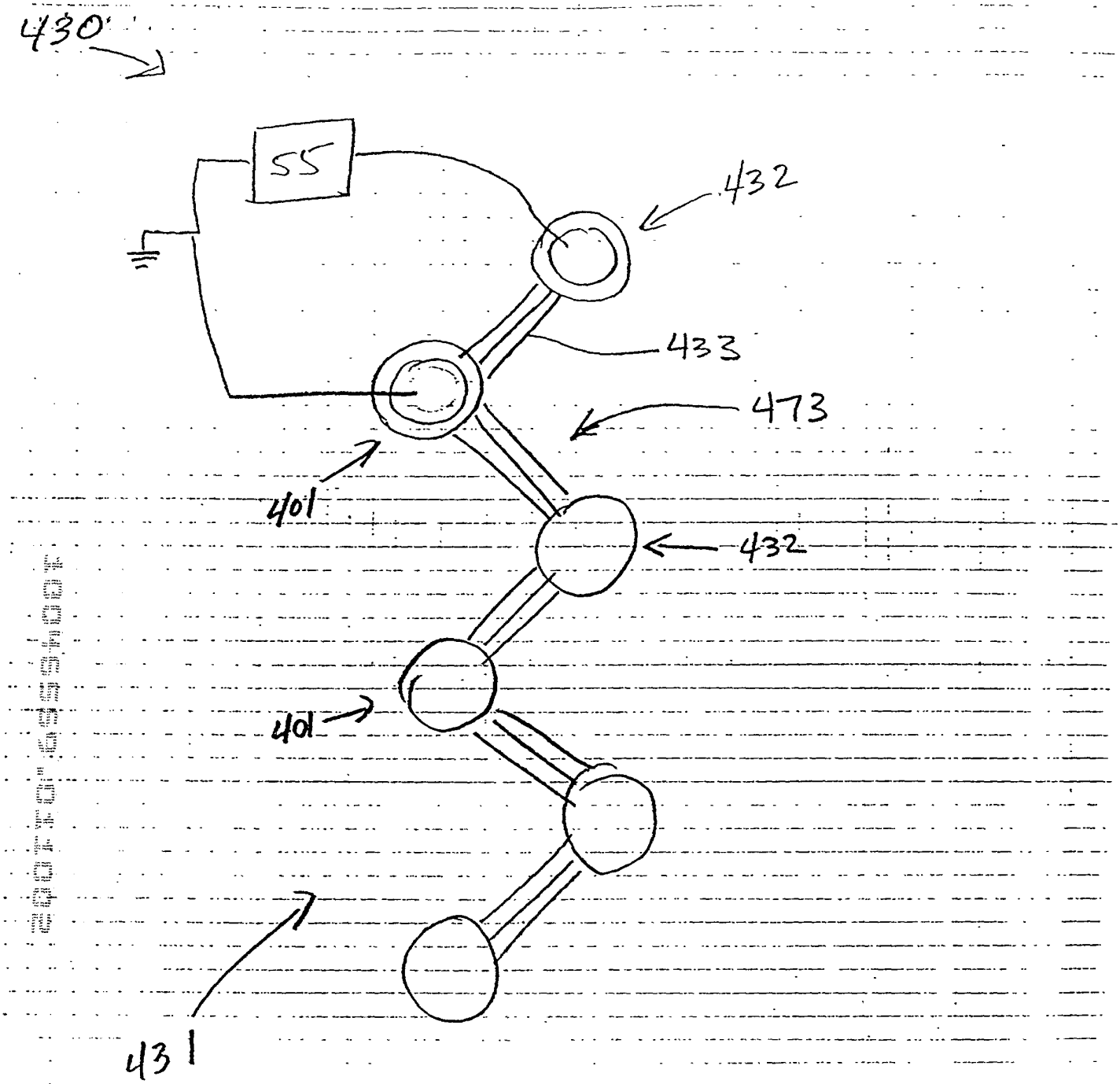


FIG. 26

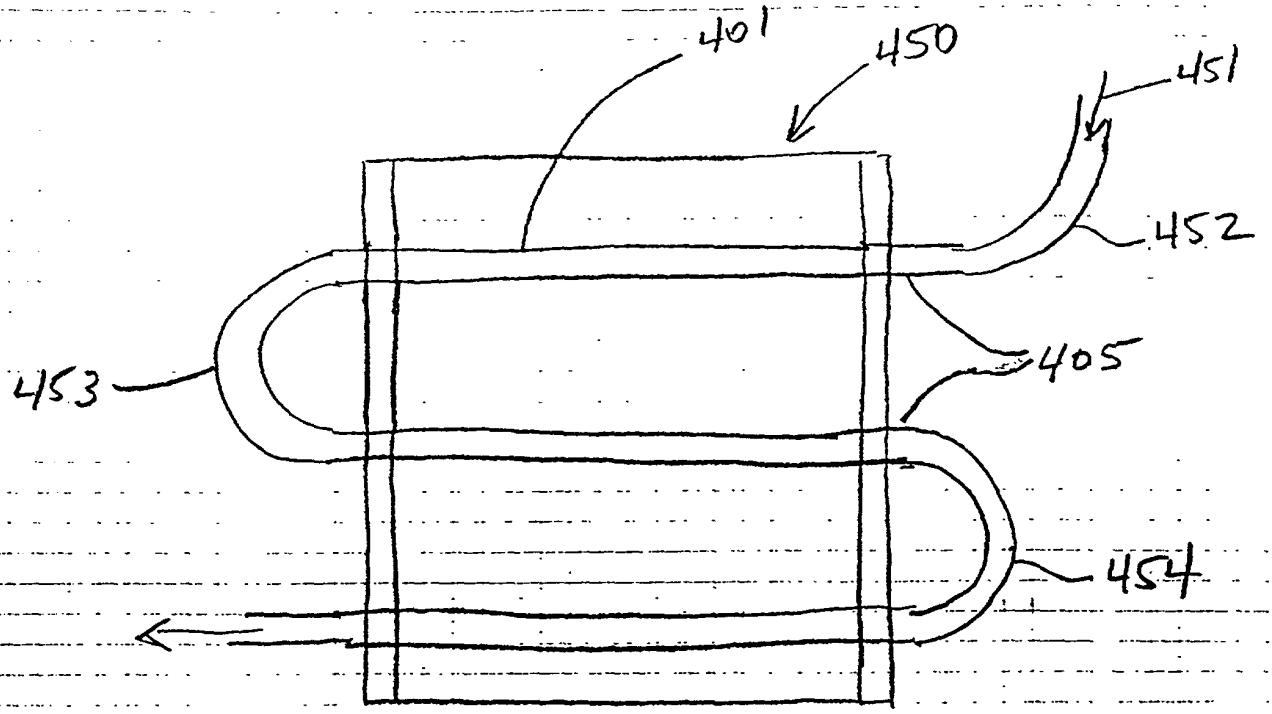


FIG. 27

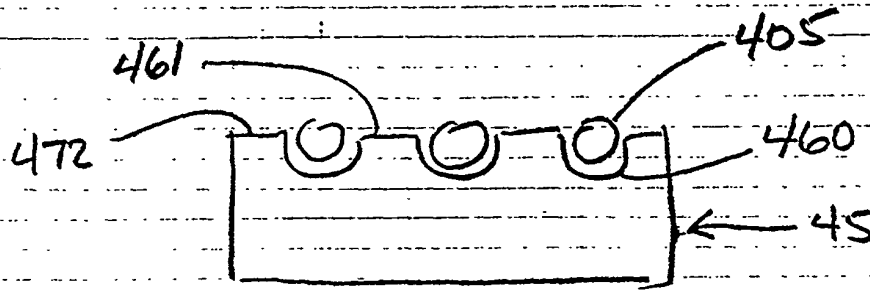


FIG. 28

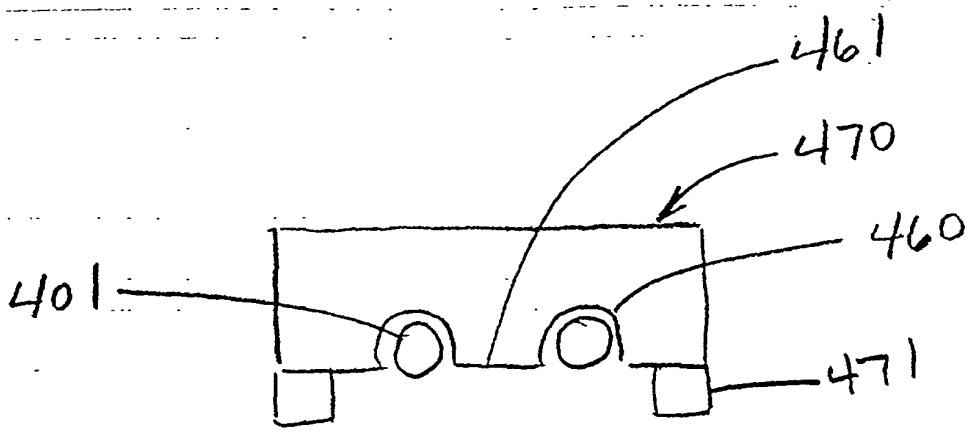


FIG. 29

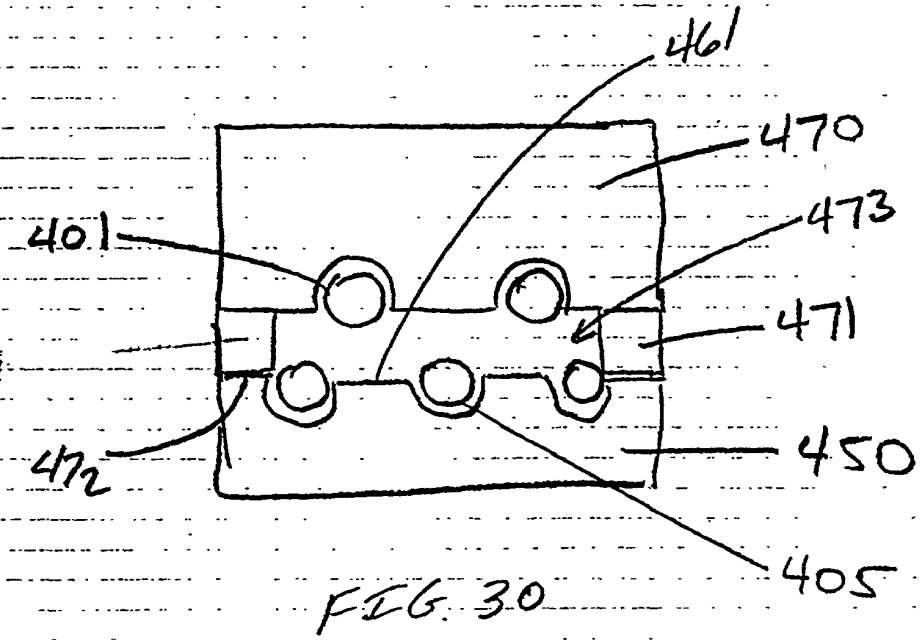
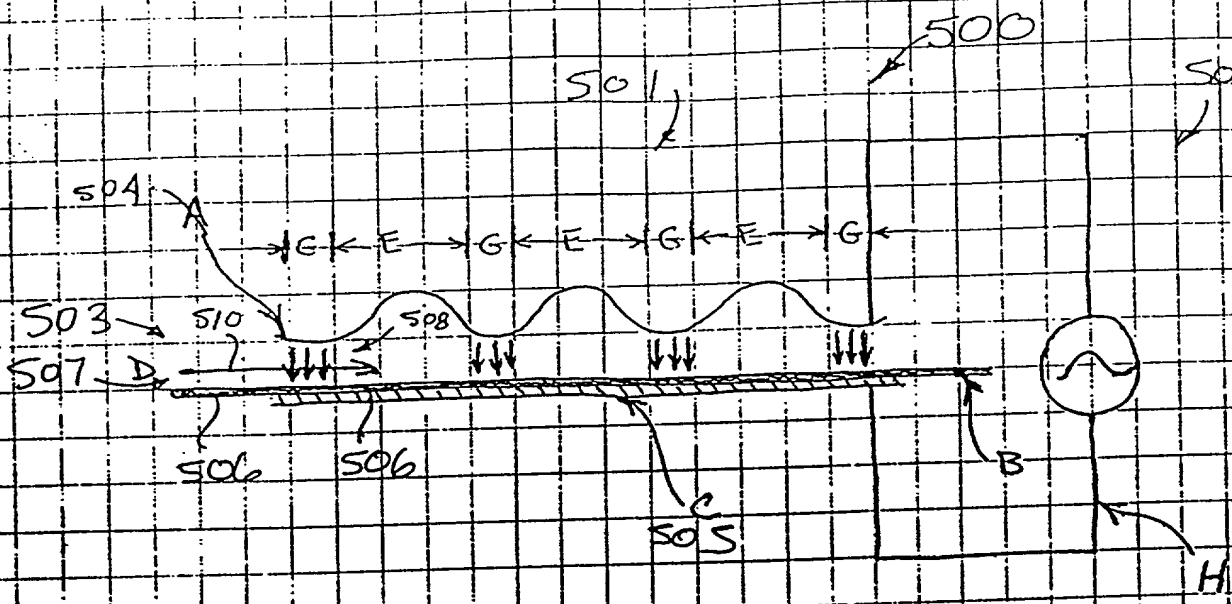


FIG. 30

BASIC CONFIGURATION



A WIRE (CONDUCTOR)
B DIELECTRIC
C PLATE (CONDUCTOR)
D AIR FLOW (CAN ALSO BE INTO SHEET)
E AREA OF LOWEST STRESS
G DISCHARGE, HIGHEST STRESS
H HIGH VOLTAGE, ALTERNATING CURRENT OR HIGH VOLTAGE PULSED DC

FIG. 31

CURRENT LIMITATION AT DISCHARGE G

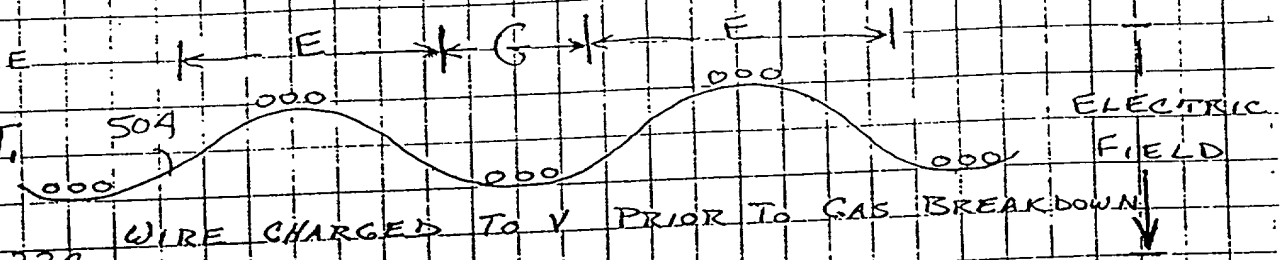


FIG. 32a WIRE CHARGED TO V PRIOR TO GAS BREAKDOWN

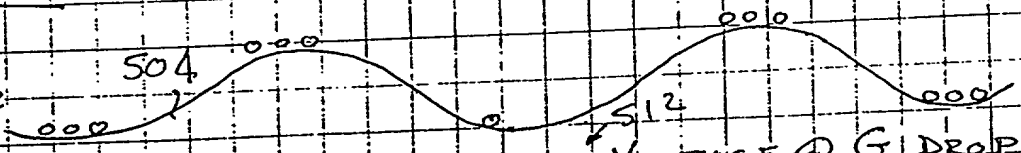


FIG. 32b GAS BREAKDOWN VOLTAGE @ G DROPS

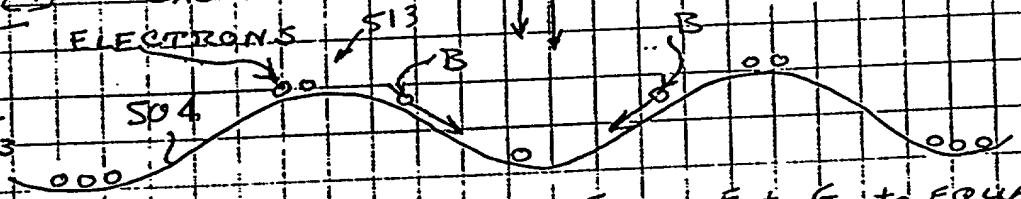


FIG. 32c ELECTRONS MOVE FROM E to G to EQUALIZE V

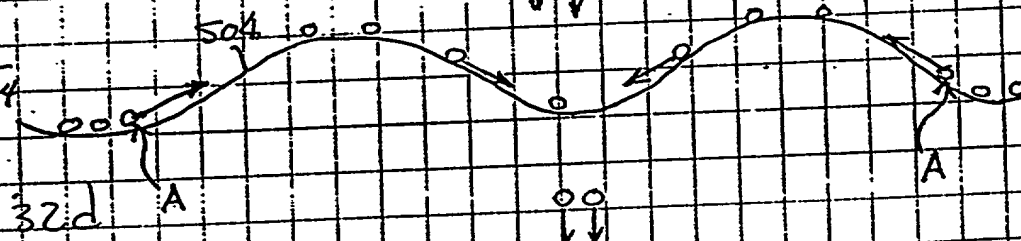


FIG 32d

ELECTRON MOVEMENT A NOT PERMITTED SINCE ELECTRONS WON'T MOVE AGAINST FIELD

THERE FOR WHEN DISCHARGE >> FASTER THAN CHARGING, ELECTRONS AVAILABLE FOR DISCHARGE @ G CAN ONLY BE SUPPLIED FROM G AND ADJACENT Es.

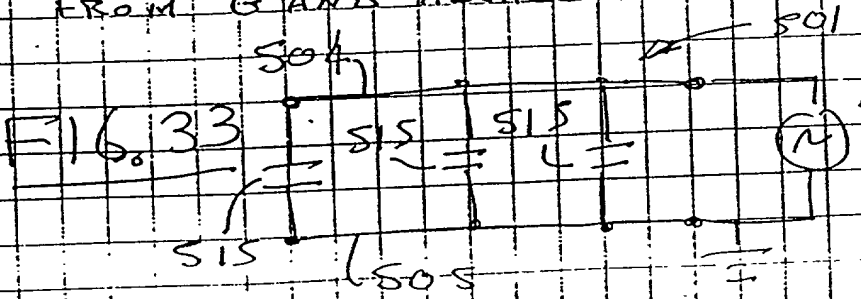


FIG. 33

FILLING SPACES WHICH DON'T CORONA

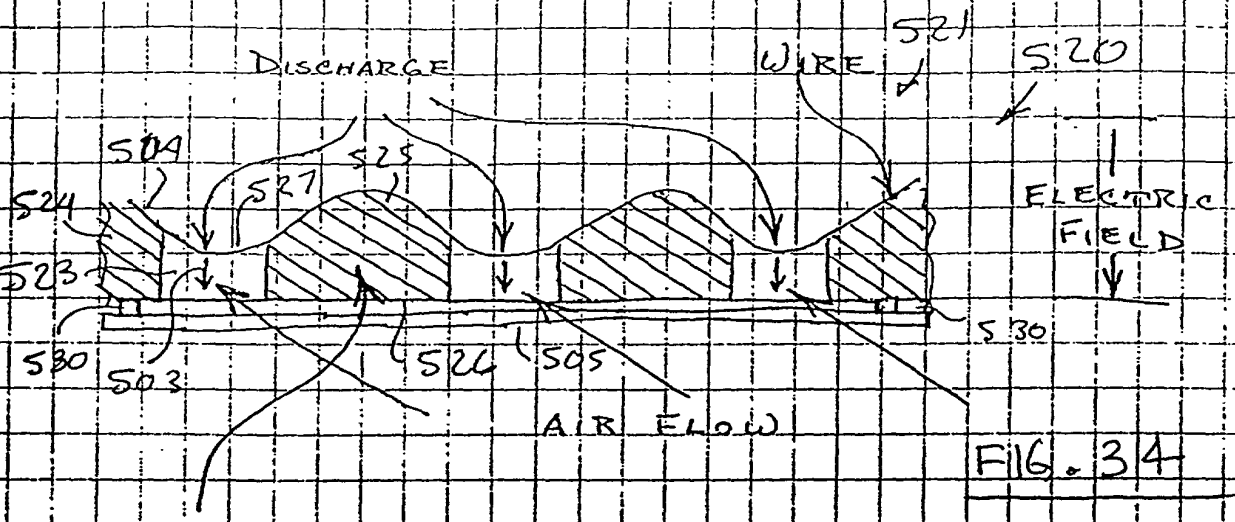


FIG. 34

FILLED SPACES

NOTE

AIR FORCED TO FLOW IN AREAS WHERE THERE IS DISCHARGE

BASIC FORM WITH DIELECTRIC SPACER

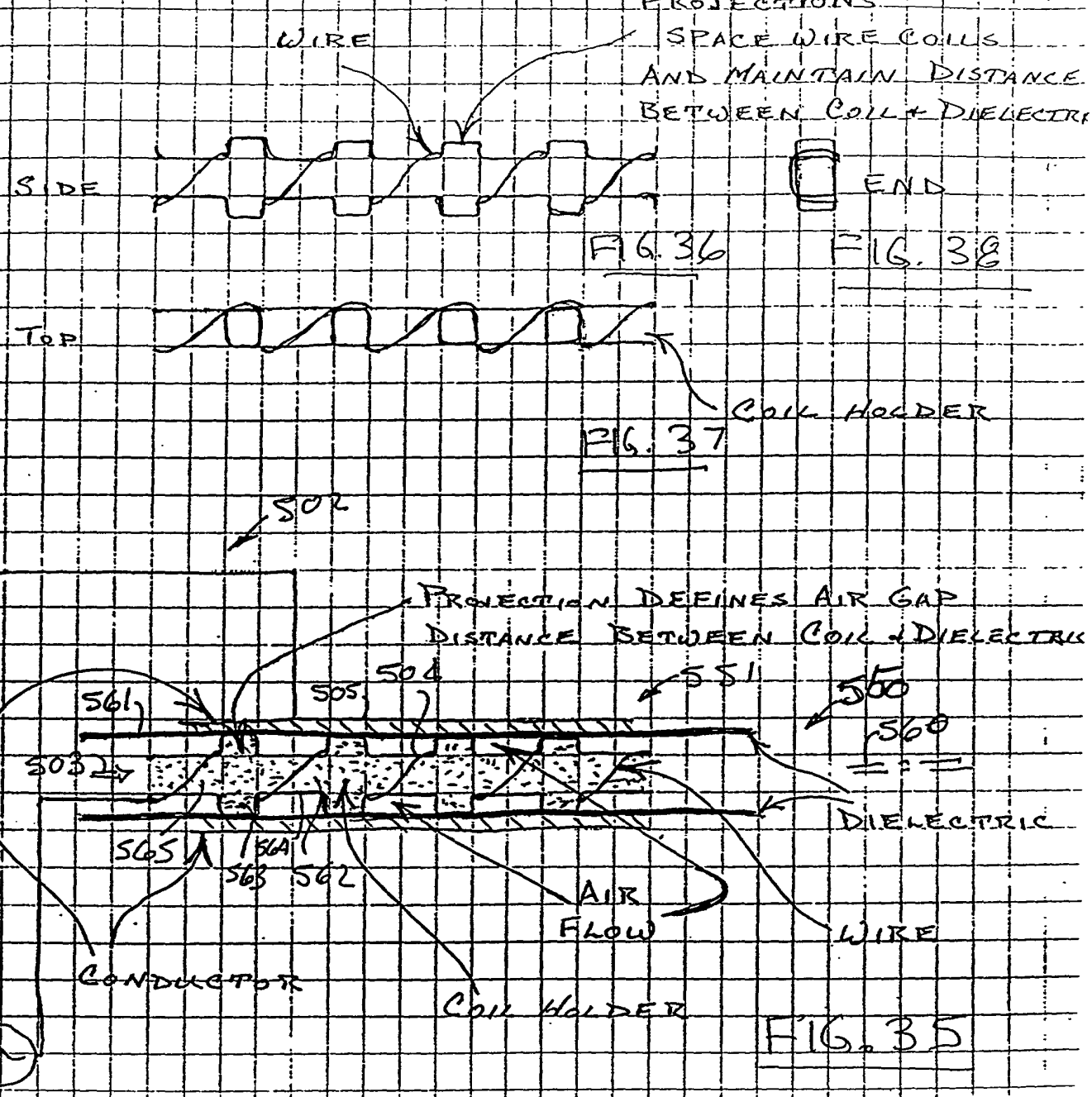


FIG. 35

ARRANGEMENT OF BASIC FORM

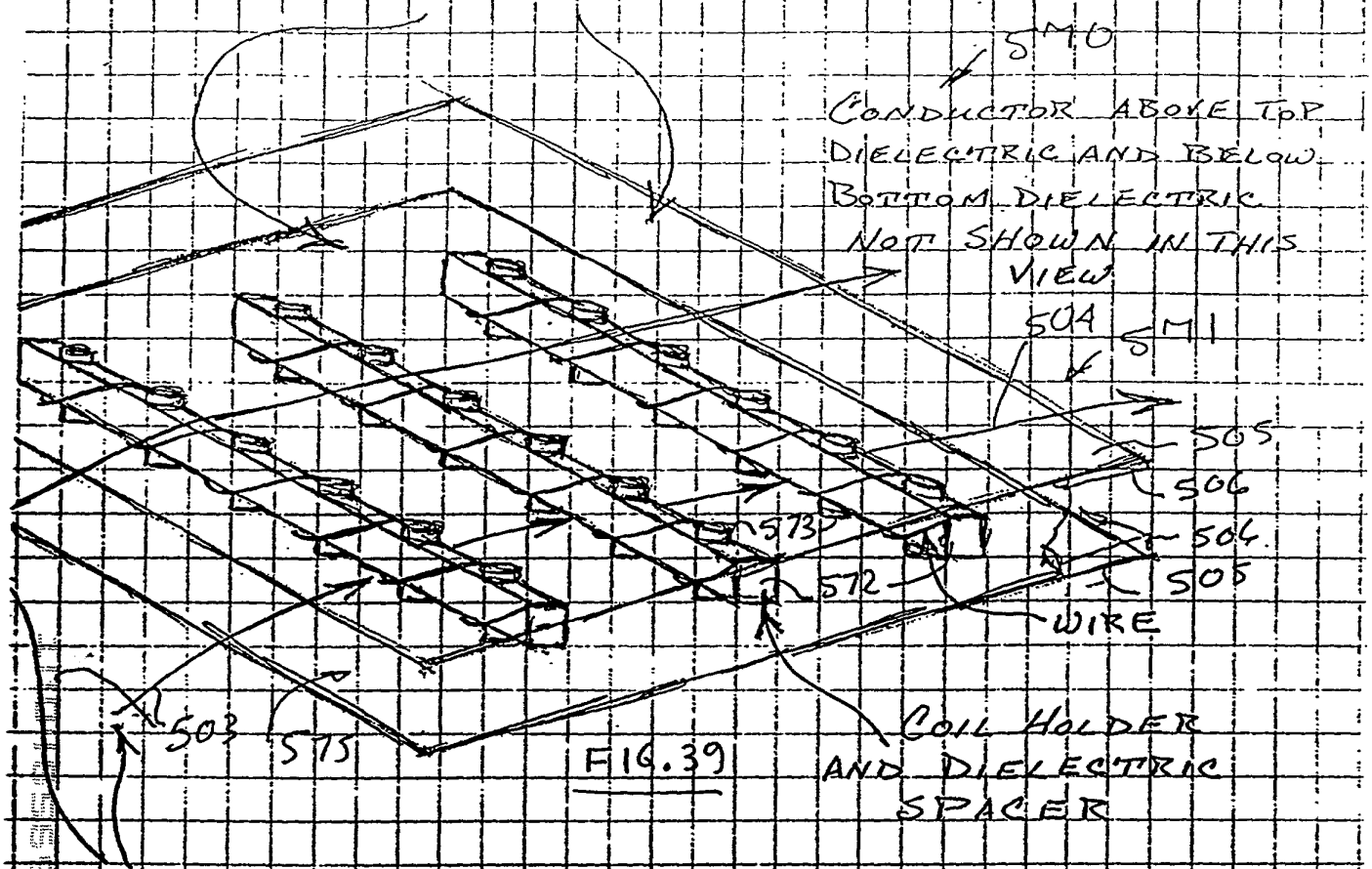


FIG. 39

AIR FLOW OVER TOP + BOTTOM OF COILS

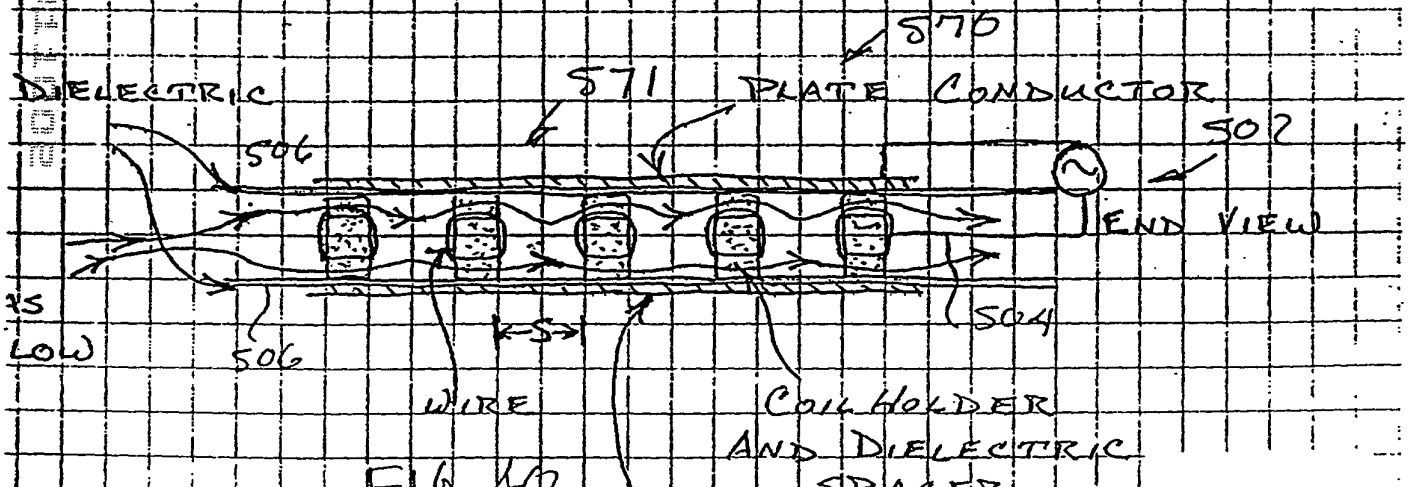


FIG. 40

NOTE:
S, OR SPACE BETWEEN COIL CAN VARY FROM TOUCHING ↑, BUT IF CURRENT LIMITATION AT DISCHARGE POINT IS TO BE MAXIMIZED THEN THE WIRE COILS SHOULD NOT TOUCH.

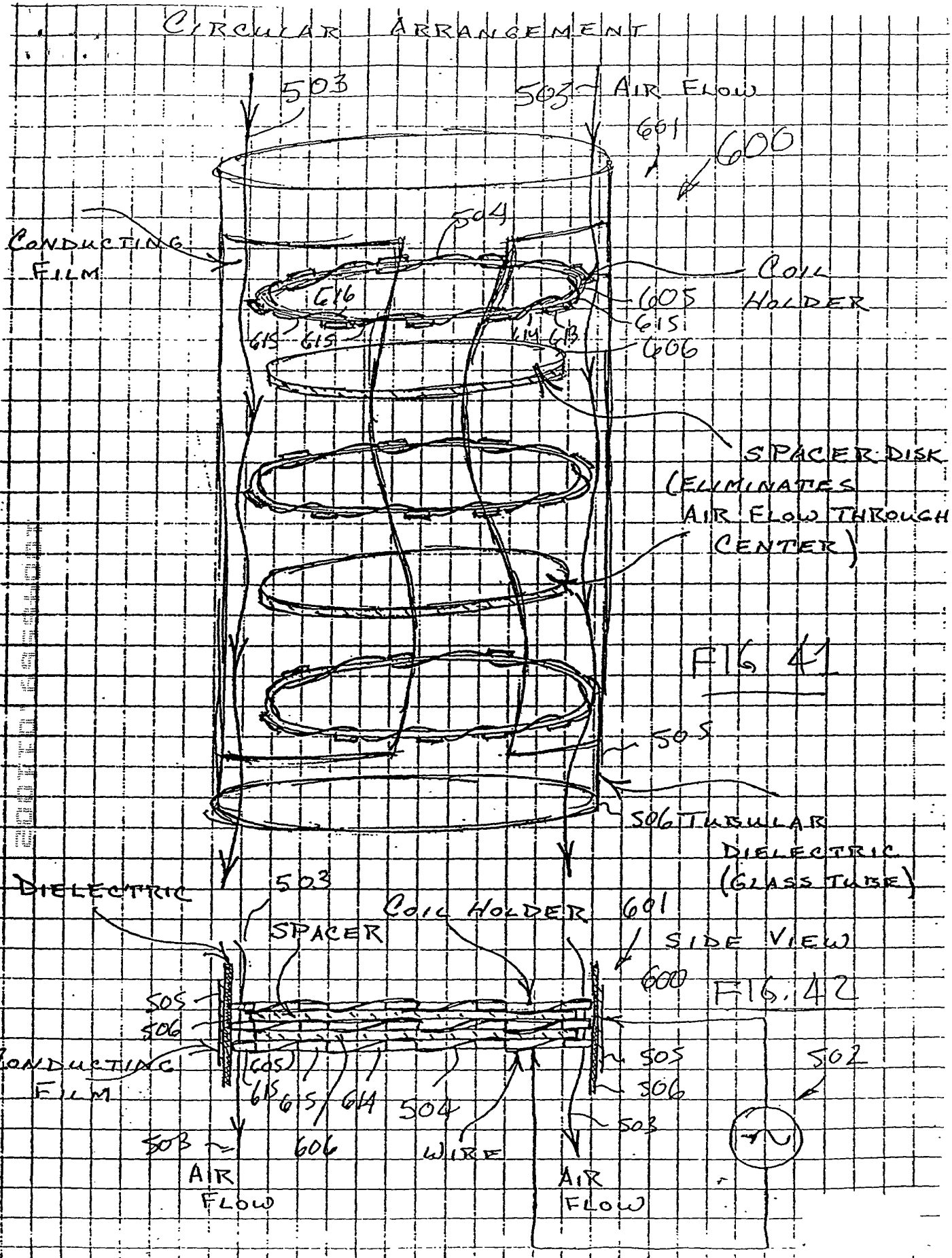

CIRCULAR ARRANGEMENT
503
503
AIR FLOW
601
600
504
CONDUCTING FILM
COIL HOLDER
605
615
606
SPACER DISK (ELIMINATES AIR FLOW THROUGH CENTER)
505
506 TUBULAR DIELECTRIC (GLASS TUBE)
DIELECTRIC
503
SPACER
COIL HOLDER
601
SIDE VIEW
600
505
506
CONDUCTING FILM
504
WIRE
502
503
AIR FLOW
AIR FLOW

FIG. 41

FIG. 42

CIRCULAR ARRANGEMENT

END VIEW

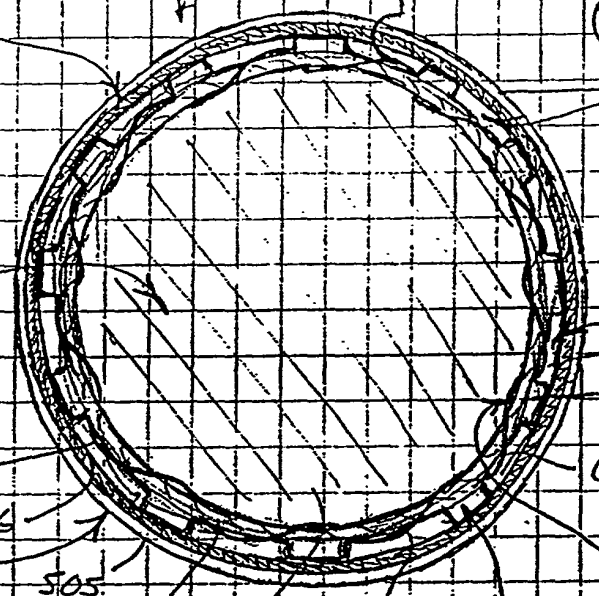


FIG. 43

THREADED ROD REACTOR

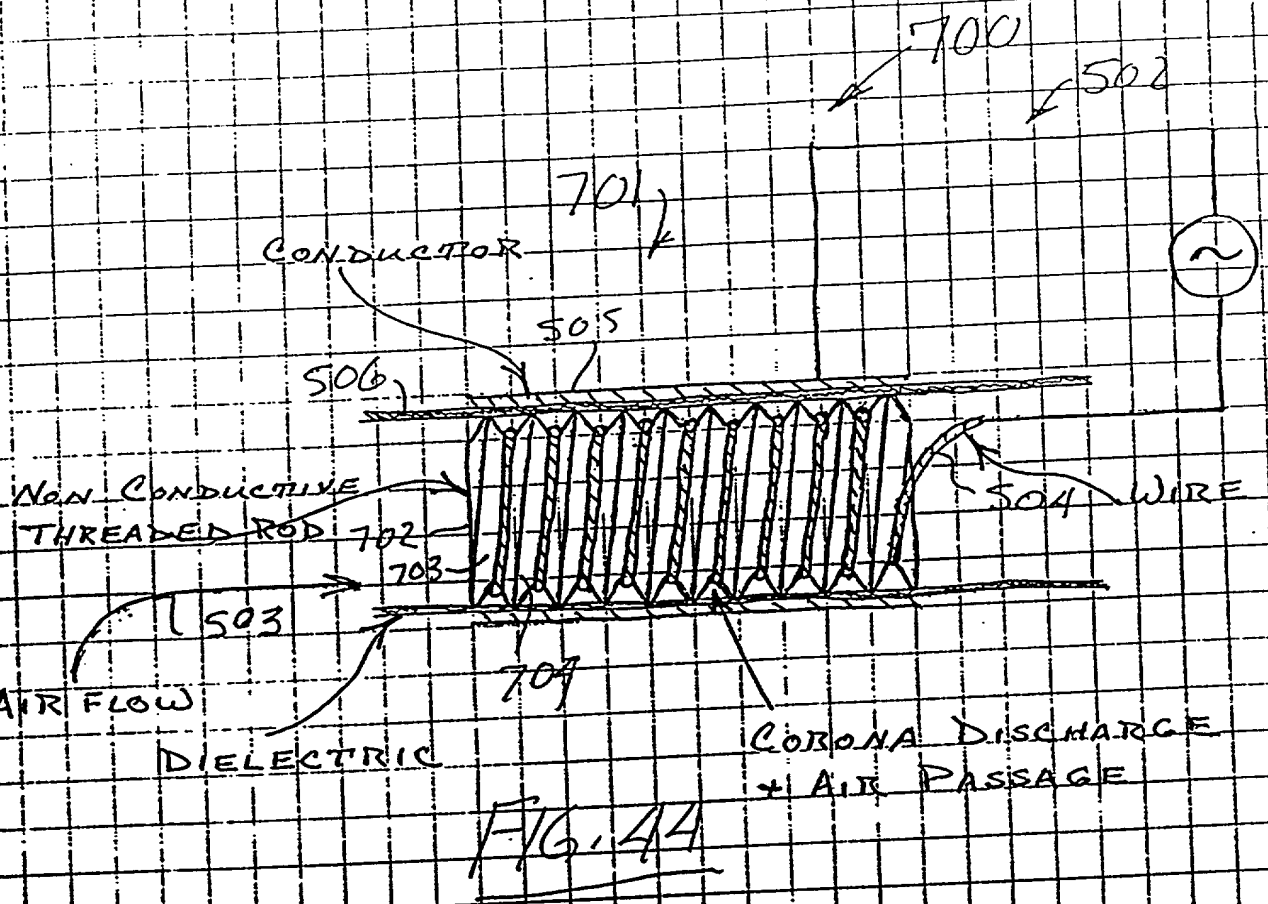
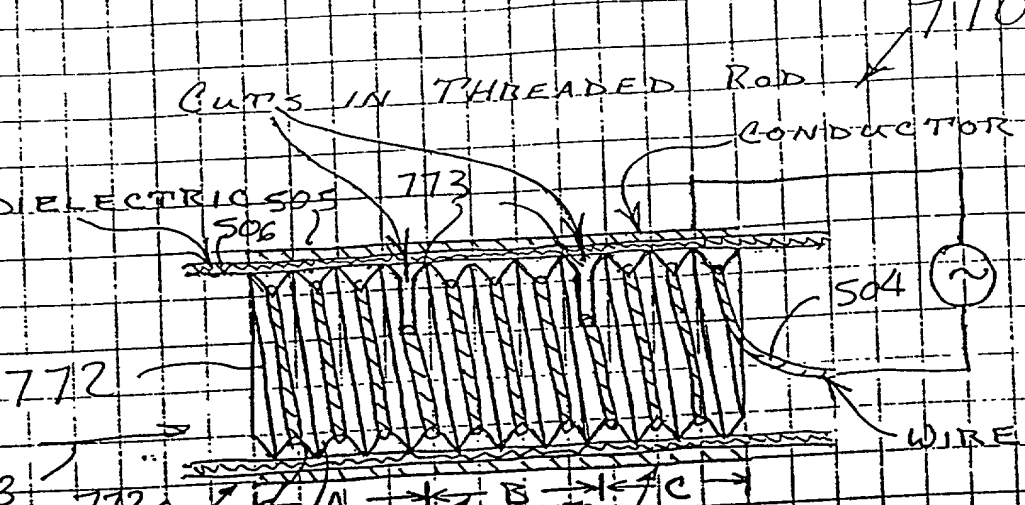


FIG. 44

NOTES

1. WIRE IS WRAPPED AT THE BOTTOM OF THE THREAD CUT IN THE NON CONDUCTIVE ROD
2. AIR FLOWS ALONG PASSAGE FORMED BY APEX OF CUT THREAD AND DIELECTRIC CYLINDER (GLASS TUBE)
3. THE CONTINUOUS COIL BEHAVES AS A SINGLE CAPACITOR

MODIFICATIONS TO THREADED ROD REACTOR



EQUIVALENT CIRCUIT = 3 || CAPACITORS

FIG. 45

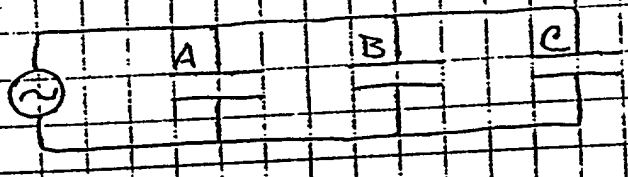


FIG. 46

NOTE:

1. THE REGIONS BETWEEN THE CUTS IN THE THREADED ROD ACT AS INDIVIDUAL CAPACITORS.
2. THE CUTS INCREASE THE AREA OF THE GAS FLOW PASSAGE, WHICH IS NORMALLY DEFINED BY THE THREAD AND THE DIELECTRIC.
   THIS INCREASE IN CROSS SECTIONAL AREA (IN THE CUT) DECREASES VELOCITY AND PROMOTES IRREGULAR GAS FLOW, THUS INCREASING GAS MIXING.

MODIFICATIONS TO THREADED ROD REACTOR

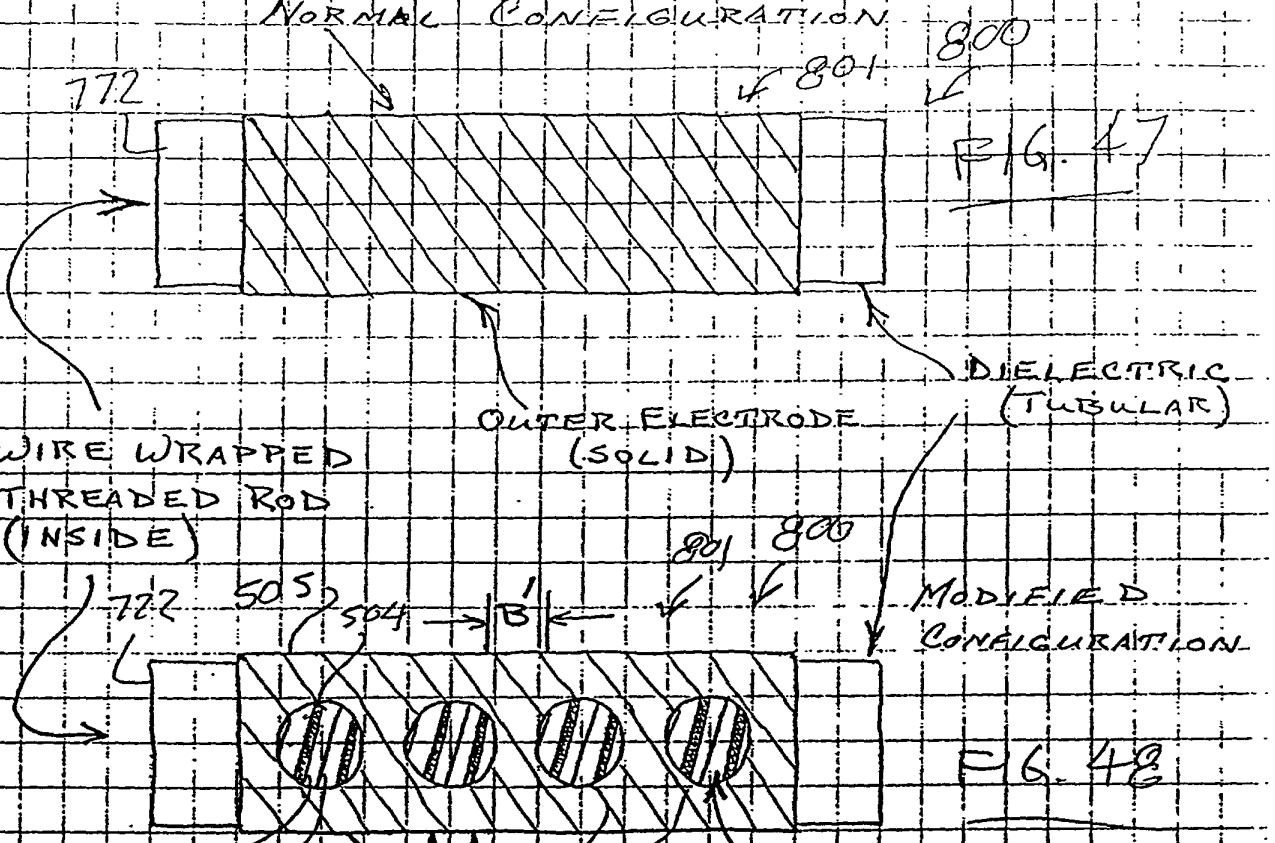


FIG. 47

FIG. 48

NOTE:

HOLES IN OUTER ELECTRODE PRODUCE DISCONTINUITIES IN CAPACITANCE.
EQUIVALENT CIRCUIT WOULD BE A NUMBER OF PARALLEL UNEQUAL CAPACITORS.
IE. CAPACITANCE @ A WOULD BE A SINGLE WIRE WRAP
" @ B " " A DOUBLE " "

TWISTED WIRE REACTOR

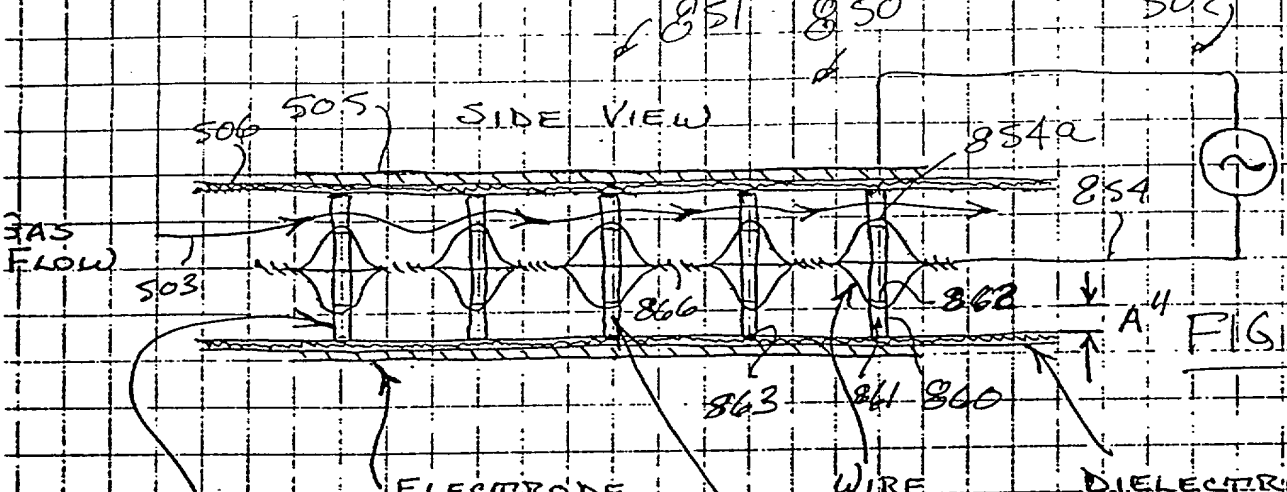


FIG. 49

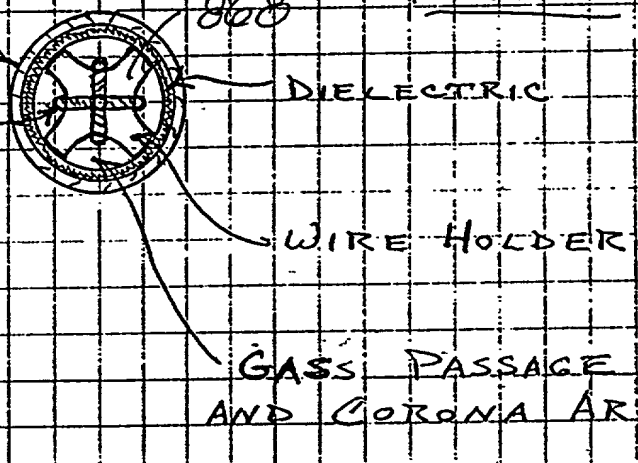


FIG. 50

NOTE:

IF GAP "A" KEPT SMALL, THEN DISCHARGE WILL BE A CORONA

IF GAP "A" INCREASED, THEN DISCHARGE WILL BECOME AN ARC. THE WIRE HOLDER CAN BE RECONFIGURED SO THAT THE AIR IS DIRECTED MORE PRECISELY THROUGH THE ARC.

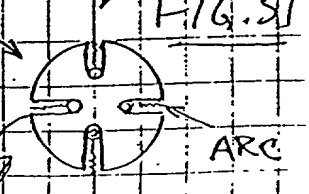


FIG. 51

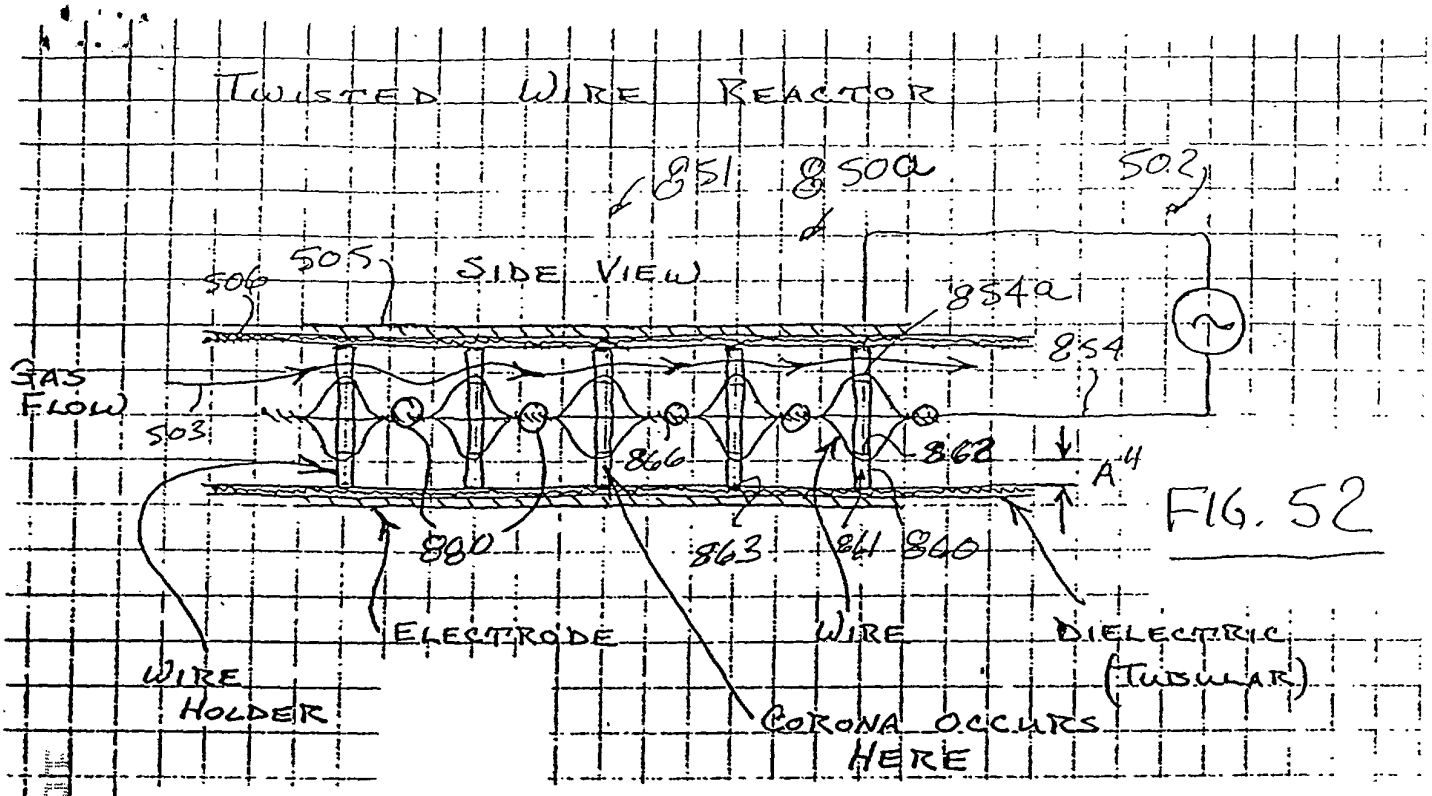

TWISTED WIRE REACTOR
851 & 502
502
506
505
SIDE VIEW
854a
854
GAS FLOW
503
866
862
A
880
863
841
840
ELECTRODE
WIRE
DIELECTRIC (TUBULAR)
WIRE HOLDER
CORONA OCCURS HERE

FIG. 52